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## PREFACE

The United States Department of Agriculture conducts numerous pest control and pest-control-related research activities. To provide literature support to the various Department agencies carrying on these studies, a Pesticides Information Center has been established in the National Agricultural Library.

A current inventory of these projects has been compiled to assist the scientists of the Department in evaluating their contributions to the overall program of the Department. This inventory will assist the scientist in the development of new approaches to pest-control-related problems. The interdisciplinary nature of pest-control-related research requires a knowledge of programs in progress in other disciplines.

The funding and man-years indicated in this inventory is intended to give a rough estimate of the input in these two areas. The funding is at the project level and as such is not intended to reflect overall budget levels.

It is desired that this inventory of pest control and pest-control-related activities of the United States Department of Agriculture will serve to bring about closer cooperation within the Department and with other agencies concerned in these fields of research.

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NATIONAL AGRICULTURAL LIBRARY

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July 1965 11

ARS-Agricultural Engineering Research Division

Descriptive title of project	Brief description of objectives of project
Pioneering Research Lab. on Physics of Fine Particles	Research in formation and behavior of fine particles and the forces affecting them and the development of descriptive mathematical equations.
Equipment and Procedures for Reducing Chemical hazards Associated with Control of Livestock Insects	To minimize residues from the chemical control of insects affecting livestock.
Investigations of Equipment and Techniques for Application of Insecticides and Fungicides to Crops by Ground Machines	To investigate equipment and techniques for the application of insecticides and fungicides for more effective and economical control of insects and diseases on agricultural crops with ground machines.
Equipment for the Application of Chemicals to the Soil for Control of Soil Pests	To develop and evaluate equipment and techniques for the application of chemicals to the soil for most effective control of soil pests.
The Development and Evaluation of Equipment and Techniques for Broadcast Application of Granular Pesticides with Air Blast Machines	To develop and evaluate equipment and techniques for broadcast application of granular pesticides with air,blast machines for more rapid and efficient application to agricultural crops.
The Development and Evaluation of Equipment for Control of Corn Insects in the Midwest	To develop and evaluate equipment and techniques for more effective and efficient control of corn insects in the Midwest
Developing Equipment for Practical Control of Insects on Grain Crops Grown in the Southeast	To develop an effective system for application of insecticides to grain plants.

April 28, 1965

Fund assigned <sup>1/</sup> (project level)	:	Locations of work	:	Project leaders	:	Man-yrs. on proj.
Intra- : Extra- mural : mural <sup>2/</sup>	:	City and State	:		:	Prof. : Sub- GS-7 & : prof. : above :
<u>Dollars</u>		<u>Dollars</u>				
38,000		Wooster, Ohio		R. D. Brazee		1.0 1.0
27,000		Kerrville, Tex.		I. L. Berry		1.1 1.5
35,500		Wooster, Ohio and Forest Grove, Oreg.		Frank Irons and V. D. Young		1.0 1.1
34,000		Wooster, Ohio		O. K. Hedden		1.0 1.0
2,500		Wooster, Ohio		Frank Irons		0.1 0.1
12,000		Wooster, Ohio Ames, Iowa		Frank Irons and W. G. Lovely		0.7 0.2
15,000		Tifton, Ga.		E. A. Harrell		0.8 0.4

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

ARS-Agricultural Engineering Research Division

Descriptive title of project	Brief description of objectives of project
New Mechanical and/or Physical Methods for Insect Control on Grain Crops	To develop new equipment, techniques, or materials for insect control or eradication on grain crops.
Detecting and Measuring Spray Deposits on Corn Ears and Silks	To develop a method for evaluating the distribution of insecticides on corn ears and silks.
Equipment for the Above-ground Application of Agricultural Chemicals in Cotton	To develop application equipment to improve the efficiency of chemicals for weed, insect and disease control, defoliation and desiccation in cotton.
Equipment for Soil-Incorporation of Chemicals for Cotton Pest Control	To develop and evaluate equipment for placing liquid, dust and granular chemicals in soil for weed, insect and disease control.
Mechanical Methods of Destroying Fallen Cotton Squares	To develop, test, and improve equipment for destroying fallen cotton squares.
Development of Equipment and Techniques for Control of Orchard Insects	To conduct research on the engineering phases of the control of orchard insects.
Application of Air Jets with a Vortex to Improve Penetration of Air-Borne Insecticide Sprays into Dense Foliage of Citrus Trees	To produce an air jet for applying insecticide solutions efficiently into the dense foliage of citrus trees.



April 28, 1965

Fund assigned <sup>1/</sup> (project level)		Locationsof work City and State	Project leaders	Man-yrs. on proj.	
Inter- mural	Extra- mural <sup>2/</sup>			Prof.	Sub- GS-7 & : prof. above :
Dollars	Dollars				
15,000		Tifton, Ga.	E. A. Harrell	0.8	0.4
9,000		Tifton, Ga.	E. A. Harrell	0.4	0.2
9,000		(Auburn, Ala. _(Shafter, Calif. (Lubbock, Tex. (Stoneville, Miss.	T. E. Corley ) L. M. Carter ) E. B. Hudspeth ) O. B. Wooten )	0.7	1
28,000		_(Stoneville, Miss. _(Shafter, Calif.	O. B. Wooten ) L. M. Carter )	1.0	2
34,000		State College, Miss.	E. C. Burt	0.8	0.8
33,000		Yakima, Wash.	Vacancy	0.2	0.3
43,000(g)		Beit Dagan, Israel (PL-480) <sup>3/</sup>	A. Zucker	--	--

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ 3-year grant negotiated during FY 1964.

ARS-Agricultural Engineering Research Division

Descriptive title of project	Brief description of objectives of project
Equipment for Application of Pesticides, Defoliant, Fertilizers and Seeds from Agricultural Aircraft	To develop principles and methods for distributing materials from agricultural aircraft for most economical and effective application.
Aerial Spray Equipment for Forest Insect Control	To develop and improve distribution equipment and operating procedures for aerial application of chemical and biotic insecticides to control destructive forest and forest plantation insects.
Equipment for Application of Agricultural Materials from Fixed-wing Aircraft	To develop improved equipment and techniques for application of agricultural materials from low speed, fixed-wing aircraft.
Evaluation of Devices for Distribution and Metering of Pre-emergence Herbicides on the Soil and Mixed with the Soil in the Surface Layer	To develop effective soil mixing devices for mixing spray and granular herbicides with soil, to determine how much soil mixing is required for effective weed control, and to develop design criteria for soil mixing equipment.
Investigations of Equipment and Techniques for Mechanical and Chemical Control of Weeds in Crops	To determine the effectiveness of cultivation and herbicide application equipment and practices for effective and economical weed control in crops.
Development of Equipment and Techniques for Weed Control Under Southern Conditions	To conduct research on the engineering phases of weed control in the South.

April 28, 1965

Fund assigned <sup>1/</sup> (project level)		:	:	:	Man-yrs. on proj.	
Intra- : Extra- mural : mural <sup>2/</sup>		:	Locations of work : City and State :	Project leaders :	Prof. : Sub- GS-7 & : prof. above :	
<u>Dollars</u>	<u>Dollars</u>					
50,000			Forest Grove, Oreg. and Wooster, Ohio	V. D. Young and Frank Irons	1.9	1.8
31,000			Beltsville, Md.	D. A. Isler	1.3	---
	63,000(c) <sup>3/</sup>		State College, Miss.	L. A. Liljedahl	--	--
8,000			Ames, Iowa and Columbia, Mo.	W. G. Lovely and M. R. Gebhardt	0.3	0.2
38,000			Ames, Iowa and Columbia, Mo.	W. G. Lovely and M. R. Gebhardt	2.0	0.6
36,000			Stoneville, Miss.	C. W. Gantt	0.4	0

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ 3-year contract, negotiated during FY 1965.

Descriptive title of project	: : : : Brief description of objectives of project
Equipment and Techniques for Applying Herbicides to Vegetation in Puerto Rico and Texas	To develop equipment and techniques for applying brush killing chemicals to tropical and sub-tropical forest areas.
Pesticides in Farmstead Water Supplies	To develop and evaluate procedures and equipment for preventing or removing pesticide contamination in farmstead water supplies.
Development of Equipment for Attracting and/or Destroying Economic Insects with Electric Energy in North Central States	To develop electric equipment for the attraction and/or destruction of insects affecting man, animals, and crops, with particular emphasis on insects of economic importance in the North Central States.
Use of Radiofrequency Energy for Insect Control and Conditioning of Farm Products	To investigate and evaluate use of radiofrequency electric fields for treatment of grains and seeds to destroy insect infestation and improve germination characteristics.
Development of Electric Equipment for Attracting and/or destroying Economic Insects in the Southwestern States	To develop electric equipment for the attraction and/or destruction of insect pests affecting plants, animals, and man with particular emphasis on insects of economic importance in the Southwestern States.
Development of Equipment for Attracting, Repelling and/or Destroying Economic Insects with Certain Physical Stimuli in the Southeastern States	To develop equipment for the attraction, repulsion and/or destruction of insects by the use of certain physical stimuli such as electromagnetic energy and sonic energy with particular emphasis on selected insect species affecting plants, animals and man in Southeastern States.



April 28, 1965

Fund assigned <sup>1/</sup>		:	:	:	Man-yrs. on proj.	
(project level)		:	Locations of work	:	Project leaders	:
Intra-	Extra-	:	City and State	:		:
mural	mural <sup>2/</sup>	:		:	GS-7 &	:
		:		:	above	:

Dollars	Dollars				
90,000		Mayaguez, Puerto Rico and College, Station, Tex.	J. R. McCalmont and L. F. Bouse	2.0	2.0
56,000		Beltsville, Md. and Watkinsville, Ga.	R. F. Eagen and Max Lewallen	2.0	1.0

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14,000		Lafayette, Ind.	J. W. Barrett	1.2	0
11,000		Lincoln, Neb.	S. O. Nelson	0.7	1.0
32,000		College, Station, Tex.	J. Hollingsworth	2.0	1.0
52,850		Blacksburg, Va.	J. M. Stanley	2.0	1.0

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

ARS-Agricultural Engineering Research Division

Descriptive title of project	Brief description of objectives of project
Evaluation and Development of Equipment and Physical Methods for Control of Flies and Other Livestock Pests	To develop physical and mechanical means of controlling livestock insects, with special emphasis on the utilization of radiant energy as the factors involved in insect attraction and repellency, and the development of wind currents, barriers, traps, and other devices.
The Response and Physiological Effects of Light on the Boll Weevil	To determine the spectral response and the interrelationship of light and odor attractancy of the boll weevil and to determine the effect of the responsive wavelengths on the biology of the insect.
Insect Response to Sound Stimuli	To investigate the possibility of attracting or repelling insects, particularly flies, with sound stimuli, including ultrasonic frequencies.
Electric Insect Traps for Control of Tobacco Insects	To develop and evaluate the effectiveness of electric insect trapping devices using ultraviolet radiating sources and other physical stimuli as attractants, and to develop more effective traps for tobacco insects.

April 30, 1965

Fund assigned <sup>1/</sup> (project level)		:	:	:	Man-yrs. on proj.	
Intra- : Extra- mural : mural <sup>2/</sup>		:	Locations of work : City and State	:	Project leaders : Prof. : Sub- GS-7 & : prof. above :	:
Dollars	Dollars	:	:	:	:	:

27,000		Beltsville, Md.	J. G. Hartsock	1.6	0
2,000		State College, Miss.	E. C. Burt	0.2	0
	49,230(c)	Blacksburg, Va.	J. G. Hartsock	1.0	0.5
62,400		Oxford, N. C.	J. J. Lam	1.0	1.0
29,300		Lexington, Ky.	J. H. Ford	1.0	1.0
	32,800(c)	Clemson, S. C.	J. M. Stanley	1.0	0

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Development of Equipment for Attracting and/or Destroying Economic Insects with Electric Energy in the Pacific Coast States	To develop electric equipment and methods to protect vegetable crops from insect damage without the accumulation of insecticide residues under conditions prevailing in the Pacific Coast States, with special emphasis on the utilization of radiant energy.
Development of Equipment, Instrumentation and Methods for the Use of Electromagnetic, sonic, and Ultrasonic Energy for the Control of Cotton Insects	To develop equipment, instrumentation and techniques essential to the use of radiant energy for controlling cotton insects, with particular emphasis on electromagnetic, sonic and ultrasonic radiant energy.
Investigation of Insect Attraction and Communication Possibilities in the Infrared Spectral Region	To determine responses of insects to infrared radiation and the extent to which infrared radiation in the 1- to 20-micron range may be involved in the attraction of certain night-flying insects and in the communication associated with mating or other activity in these species.
The Influence of Electromagnetic Energy on Green Peach Aphid, <u>Myzus persicae</u> (Sulzer)	To determine the influence of ultraviolet, visible, and infrared electromagnetic radiation upon the behavior of <u>Myzus perscicae</u> (Sulzer).



April 30, 1965

Fund assigned <sup>1/</sup> (project level)		:	:	:	Man-yrs. on proj.	
Intra- : Extra <sup>2/</sup> mural : mural <sup>2/</sup>		:	Locations of work City and State	:	Project leaders	Prof. : Sub- GS-7 & : prof. : above :
Dollars	Dollars					

33,200	Riverside, Calif.	W. W. Wolf	1.0	0
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29,300	Florence, S.C.	J. C. Webb	1.0	0
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86,100 <sup>3/</sup>	(c) Ann Arbor, Mich.	M. C. Ahrens and R. G. Dahms	1.0	1.0
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86,000 <sup>4/</sup>	(g) Lafayette, Ind.	L. D. Christenson and M. C. Ahrens	1.0	1.0
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1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) negotiated only); grant (g).

3/ Cooperative AE--\$66,125; ENT--\$20,000.

4/ Cooperative ENT--\$51,000; AE--\$35,000.

Descriptive title of project	Brief description of objectives of project
<p>Biological Controls--Research on Animal Parasites</p>	<p>Immunological methods will be investigated with the objective of developing biological control of internal parasites of livestock. Larvae of various parasites will be irradiated in an attempt to attenuate them to a point whereby they may be used as vaccines to protect livestock against parasitic diseases.</p> <p>Studies of the influence of special practices of production and management of cattle, sheep, and poultry, upon picking up common species of injurious helminthic parasites, with special reference to the development of feasible practices that minimize parasitism and prevent the rearing of healthy animals without resort to chemical control measures. The investigations should encompass tests with non-specific and attenuated strains of parasites as potential immunizing agents.</p>
<p>Basic Research</p>	<p>Basic research will be carried out on the artificial propagation of livestock parasites and on tissue culture techniques for the propagations of the cells of parasites with the objective of providing new approaches to the metabolic, physiologic, enzymatic, and hormonal functions of parasites.</p> <p>Studies on immunogenicity and pathogenicity of the several strains of large stomach worms of sheep and cattle, <u>Haemonchus contortus</u> and <u>H. placei</u> with particular reference to production and attenuation of strains that may be antigenically active and, therefore, of potential promise or usefulness as protective vaccines.</p>

April 29, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on project	
Intra- mural	Extra- <u>2/</u> mural			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
486,594		Beltsville, Md.	Aurel O. Foster	12	23
52,709		Auburn, Ala.	Dale A. Porter	1	1
60,338		Albuquerque, N. Mex.	Irwin H. Roberts	2	2
126,000		Univ. of Minnesota, St. Paul, Minn.	Cooperative Agreement	--	--
548,334		Beltsville, Md.	Aurel O. Foster	15	28
42,000		Univ. of Wisconsin, Madison, Wis.	Cooperative Agreement	--	--

1/ Not budget level--funds allocated to location excludes ARS and  
Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Improved Conventional Pesticides and Methods of Application	To evaluate, develop, and standardize the best possible chemical control measures for parasitic conditions affecting domestic animals and poultry.
Research on Toxicological and Pathological Effects of Pesticides, Feed Additives, etc. on Livestock as Found in Their Feed and on Crops	Research will be aimed at developing full information on the symptoms, lesions, safe doses, toxic doses, and toxic residues resulting from the use of insecticides on livestock. Particular emphasis will be placed on determining the long-term effect of subclinical doses.
	Research will be carried out on the toxic and pathologic effects on livestock of herbicides and plant pesticides.
	Research studies of the preparation and characterization of various forms of barium antimony tartrate to determine the degree of toxicity and residues in edible products of various preparations of this compound which are used as a tool in the control of parasitic and infectious diseases connected with poultry management.
	Research studies of the necessary materials, used with a particle size spectrometer, for the solution of the problem of maintaining uniform particle size emulsion droplets.
	Examine tissue sections from animals exposed to various pesticides (insecticides, herbicides, chemosterilants, fungicides, and parasiticides) and to describe the specific histopathologic changes in these tissues.



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Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on project	
Intra- mural	Extra- 2/ mural			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
50,062		Beltsville, Md.	Aurel O. Foster	2	3
41,133		Albuquerque, N. Mex.	Irwin H. Roberts	1	1
288,241		Kerrville, Tex.	R. D. Radeleff	7	12
163,872		Logan, Utah	Wayne Binns	4	1
8,000		Nacogdoches, Tex.	Cooperative Agreement	--	--
12,775		Nacogdoches, Tex.	Cooperative Agreement	--	--
50,000		Texas A & M College, College Station, Tex.	Cooperative Agreement	--	--

1/ Not budget level--funds allocated to location excludes ARS and  
Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Sanitation and Waste Disposal to Control Insect and Parasite Pests Associated with Swine Production and Avoid Undesirable Pesticide Residues in Pork	Investigation of degrees of exposure of swine to wastes and unsanitary environment with and without pesticide treatment with tests on pesticide residues in pork as basis for future work on avoidance of pesticides in pork and contamination of the environment.
Control of Flies and Insects Associated with Swine Production Without the Use of Insecticides	To investigate fly and insect propagation under different systems of handling swine wastes and devise effective methods of controlling such insects without the use of insecticides.
Evaluation and Development of Equipment and Physical Methods for Control of Flies and Other Dairy Cattle Pests	To develop physical and mechanical means of controlling dairy cattle insects with special emphasis on the utilization of radiant energy, the factors involved in insect attraction and repellancy, and the development of wind currents, barriers, traps and other devices. (Cooperative with ENT and AE)
Evaluation of Management Practices for the Control of Bovine Mastitis	To determine the factors involved in the etiology of udder infections as related to the evaluation and development of management practices for the control of bovine mastitis, without the use of chemical treatments.
Evaluation of Mechanical Sanitation as a Means of Reducing Fly Population on Dairy Farmsteads	Determine the degree of sanitation and the extent of breeding area elimination necessary to eliminate fly breeding areas on a dairy farm. The development of such practices would reduce the need for using insecticides on cattle and in dairy barns.

April 29, 1965

Funds assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
22,826		Beltsville, Md.	C. M. Kincaid	0.7	3.0
	49,299(c)	Lafayette, Ind.	C. M. Kincaid	--	--
33,200		Beltsville, Md.	R. D. Plowman	1.4	--
15,395		Beltsville, Md.	R. D. Plowman	--	--
85,500		Beltsville, Md.	R. D. Plowman	1.75	6.25
	46,660(c)	Baton Rouge, La.	R. D. Plowman	--	--

1/ Not budget level - Funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
The Basic Metabolism, Fate and Role of Agricultural Chemicals Ingested by Livestock	Basic research with cattle, sheep, swine, and poultry will be carried out on pesticides, herbicides, hormones, and other chemicals supplied as feed additives or that occur as contaminants in feed.
Investigation of Residues of New Pesticides when Ingested by Beef Cattle	To study the metabolism of new pesticides (insecticides and herbicides) which may be used on pasture, hay grain, and silage crops and to determine the pathways of excretion or the location of storage in the tissues when ingested by beef cattle.
Investigation of Pesticide Residues Ingested by Finishing and Reproducing Beef Cattle	To determine if specific insecticides accumulate in the edible tissue of beef cattle consuming contaminated feeds and the rate of dissipation of these compounds from these tissues. To determine if insecticides accumulate in beef cows during pregnancy and lactation and if these residues are transmitted to the calf through the placenta or the milk.
Pesticide Residues in the Tissues and Milk of Dairy Cattle	To determine the factors affecting the absorption, retention, and excretion of specific pesticide residues by dairy cattle.
Malathion Residues in Poultry Meat and Eggs	To relate the quantity and methods of administration of Malathion to the residues of the pesticide and its metabolites present in chicken tissues and eggs, and to test the effect of a metabolic regulator on the rate of disappearance of the residues.

April 29, 1965

Funds assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
402,600		Fargo, N. Dak.	E. J. Thacker	10.0	30.0
50,200		Beltsville, Md.	R. E. Davis	1.25	2.0
	4,300	Tifton, Ga.	B. L. Southwell	--	--
	45,180	Front Royal, Va.	B. Priode R. E. Davis P. A. Putnam	--	--
36,700		Beltsville, Md.	L. A. Moore	1.5	1.0
11,535		Beltsville, Md.	L. A. Moore	--	--
	16,800	Tifton, Ga.	B. L. Southwell	--	--
	50,100(c)	Blacksburg, Va.	L. A. Moore	--	--
	36,967(c)	Ames, Iowa	C. A. Denton	--	--

1/ Not budget level - Funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
Factors Affecting the Absorption and Excretion of Heptachlor Epoxide by Dairy Animals	To determine the factors affecting the absorption, retention, and excretion of heptachlor plus heptachlor epoxide when fed to dairy cattle as a residue on forage.

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Funds assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

64,645(c) College Park, Md. L. A. Moore -- --

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1/ Not budget level - Funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

ARS - Crops Research Division

Descriptive title of project	Brief description of objectives of project
Research to control plant diseases, nematodes & weeds by biological and nonchemical controls	<p>This project has the overall objective of developing new biological and cultural principles and methods to control plant diseases (fungi, viruses, and bacteria), plant nematodes and weeds by conducting research to (1) exploit the potential of insects, pathogens, parasites, and predators; (2) develop improved soil and crop management and production practices; and (3) develop measures of inducing weed seed germination and inhibiting weed seed production.</p> <p>Crop rotation for nematode control in cotton and peanuts.</p> <p>Cultural and microbiological control - plant diseases.</p> <p>Control of brush (primarily juniper) on rangelands by management practices.</p> <p>Cultural control of weeds in cotton and citrus.</p> <p>Cultural control of nematodes in cotton and citrus. )</p> <p>Botany and mechanical treatment of brush, including mesquite, cacti, etc. )</p> <p>Cultural practices to control straighthead, white tip, and blast in rice. )</p> <p>Cultural control of weeds in rice through management practices. ) -</p> <p>Develop cultural practices in sugarcane to shade land and control weeds.</p> <p>Biological control of Phytophthora root rot of safflower by stress and flooding.</p> <p>Cultural control of sugarbeet cyst nematode. ) -</p> <p>Crop sequence to control sugarbeet virus yellows. )</p> <p>Nonchemical control of cotton boll-rots, Verticillium wilt and seedling diseases under irrigation. ) -</p> <p>Management practices for controlling annual weeds in cotton. )</p> <p>Cultural control of weeds in sugarbeets.</p>

May 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

1,500		Auburn, Ala.	R. O. Rebois	0.2	--
3,100		Palmer, Alaska	C. E. Logsdon	0.2	--
2,000		Flagstaff, Ariz.	T. N. Johnsen	0.1	0.1
5,900		Tempe, Ariz.	(H. F. Arle (H. W. Reynolds	0.2	0.3
4,800		Tucson, Ariz.	H. M. Hull	0.2	--
6,000		Stuttgart, Ark.	(T. Johnston (R. J. Smith	0.4	--
1,800		Brawley, Calif.	K. Beatty	0.1	--
7,300		Davis, Calif.	J. Klisiewicz	0.3	--
16,200		Salinas, Calif.	(A. E. Steele (G. Bennett	0.6	1.3
38,400		Shafter, Calif.	(L. J. Ashworth (J.H. Miller	1.7	2.0
5,200		Ft. Collins, Colo.	E. E. Schweizer	0.2	0.2

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division-level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Weed control in sugarcane by quick shading and dense varieties.
	Biological control of aquatic weeds in southern waterways.
	Biological control of nematodes in citrus.) Fungus diseases of nematodes in citrus. )
	Develop cultural methods in sweet sorghum for weed and insect control.
	Effect of crop residues on peanut diseases.
	Crop rotation to control tobacco nematode and root disease. ) Cultural control of weeds in peanuts and ecology of nutsedge. ) Cultural control of weeds in vegetables, including plant beds. ) Cultural control of nematodes in vegetables, ornamentals, fruit, and field crops. ) Cultural methods to control root diseases of peppers and tomatoes. )
	Cultural control of weeds in soybeans. ) Cultural control of nematodes in soybeans. )
	Cultural control of pasture weeds.
	Effect of crop sequence on brown stem rot of soybean.
	Cultural control of weeds in wheat and grain sorghum.
	Cultural practices to control smut, charcoal rot and seedling blights of grain sorghum.
	Cultural practices to control tobacco root diseases and weeds.



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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
12,400		Canal Point, Fla.	L. Hebert	0.4	0.9
30,500		Ft. Lauderdale, Fla.	R. D. Blackburn	1.0	2.0
25,400		Orlando, Fla.	(J. H. O'Bannon (W. A. Feder	0.7	0.9
4,700		Cairo, Ga.	K. Freeman	0.2	0.4
5,700		Experiment, Ga.	L. Boyle	1.0	---
62,200		Tifton, Ga.	(J. Gaines ( (E. W. Hansen ( (R. B. Taylorsor ( (B. B. Brodie ( (C. A. Jaworski	3.0	1.8
17,600		Urbana, Ill.	(L. E. Wax (VACANCY	0.6	0.8
2,500		Lafayette, Ind.	M. M. Schreiber	0.2	---
3,500		Ames, Iowa	(J. Dunleavy and (C. Weber	0.2	0.8
2,500		Hays, Kans.	W. M. Phillips	0.2	---
2,000		Manhattan, Kans.	L. K. Edmunds	0.1	0.1
4,800		Lexington, Ky.	C. Bortner	0.1	0.3

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Use of fungus pathogens for biological control of nematodes.
	Control of Microsphaerella leaf spot by sanitation.
	Weed control in sugarcane by quick shading dense varieties. )
	Cultural control of weeds including Johnsongrass in sugarcane. )
	Control of weeds in agronomic crops by cultural and crop rotational schemes. )
	Sugarcane germplasm for shading land. )
	Cultural and biological research on nematodes. )
	Use of phages to control peach diseases. )
	Micro-ecological control of soilborne vegetable diseases. )
	Crop rotation in control of sugarbeet diseases. )
	Improved cultural practices for controlling Johnsongrass in soybeans.
	Distribution, pathogenicity, disease interactions, and effects on soybeans of selected nematodes.
	Effects of nematode populations and environmental influences on nematode injury to soybeans.
	Investigations on survival of certain soil-borne plant pathogens.
	Competition of nematodes and soil microflora as affected by soil conditions and amendments.
	Effect of soil management and soil fumigation on plant nematode control.

May 1965

Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
16,700		Baton Rouge, La.	W. Birchfield	0.7	0.7
16,600		Bogalusa, La.	T. van der Zwet	0.5	---
30,700		Houma, La.	(R. Breaux - (R. Millhollon	1.2	1.5
367,500		Beltsville, Md.	(VACANCY ( (I. Stokes (R. M. Sayre (H. Fogle (G. Papavizas ( (D. Stewart	9.8	12.0
25,700(c)		Univ. of Missouri, Columbia, Mo.	J. T. Holstun, Jr.	--	--
18,900(c)		Auburn Univ. Agr. Expt. Sta. Auburn, Ala.	J. M. Good	--	--
18,300(c)		Purdue Univ., Lafayette, Ind.	J. M. Good	--	--
54,100(c)		Nebr. Agr. Expt. Sta. Lincoln, Nebr.	G. C. Papavizas	--	--
58,600(c)		Fla. Agr. Expt. Sta., Gainesville, Fla.	J. M. Good	--	--
58,600(c)		Univ. of Calif. Berkeley, Calif.	J. M. Good	--	--

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
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Phytopathogens as weed control agents.

Cytochemistry of the developing quiescent state in  
plant embryos, rhizomes, and buds of Johnsongrass.

Natural inhibitors, stimulants, and toxicants of weeds  
and their effect on crop plants.

Crop rotation on soil-borne pathogens of sugarbeets.

Cultural practices to control sugarbeet root diseases.)  
Weed control in sugarbeets by cultural practices }  
(crop rotations). )

Cultural methods for weed and insect control in sugar-  
cane and sweet sorghum.

Mechanical and management treatments for control of )  
pasture weeds (broomsedge). )-  
Weed control in corn, soybeans, and sorghum by )  
cultural methods. )

Nonchemical control of cotton boll rots and seedling )  
diseases. )  
Cultural practices for control of Phytophthora rot of )-  
soybean. )  
Weed control in cotton, corn, and soybeans by cultural )  
methods. )

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
	108,200(c)	Stanford Res. Inst. Menlo Park, Calif.	D. L. Klingman	--	--
	72,100(g)	Texas Agr. Expt. Sta., College Station, Tex.	F. L. Timmons	----	--
	72,100(c)	Battelle Memorial Inst., Columbus, Ohio	J. T. Holston, Jr.	--	--
4,100		East Lansing, Mich.	D. Mumford	0.5	0.2
15,200		St. Paul, Minn.	(L. Calpouzos R. Anderson	0.4	0.4
8,100		Meridian, Miss.	O. Coleman	0.3	0.6
6,200		State College, Miss.	(T. Easley - (V. C. Harris	0.5	---
16,700		Stoneville, Miss.	(C. D. Ranney (E. Hartwig (C. G. McWhorter	1.3	0.2

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Weed control in pastures by cultural and management methods.
	Cultural practices (ecological management) for control of range weeds (medusa head, etc.).
	Cultural and nonchemical control of weeds in horticultural crops (apples, peaches, asparagus, cranberries.
	Biological control of flue cured tobacco diseases.
	Biological control of Burley tobacco diseases.
	Cultural control of witchweed.
	Cultural methods of controlling scab, leaf diseases, root rots and other barley diseases.
	Sanitation and steam sterilization for control of forage seed crop diseases. )-
	Cultural control of weeds in forage seed crops. )
	Biological control of cigar wrapper tobacco diseases.
	Control of nematodes in vegetable crops by crop rotation.
	Control of tobacco root diseases by crop rotation.
	Cultural practices to control tobacco nematodes, weeds, and root diseases.
	Control of nematodes in soybeans by crop rotation.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
4,700		Columbia, Mo.	E. J. Peters	0.2	0.2
36,300		Reno, Nev.	J. A. Young	1.0	2.0
18,300		New Brunswick, N. J.	W. V. Welker	0.1	1.5
2,200		Oxford, N. C.	C. Main	0.1	--
4,800		Waynesville, N. C.	L. Shaw	0.2	0.2
7,600		Whiteville, N. C.	G. H. Egley	0.4	0.4
2,100		Fargo, N. Dak.	R. G. Timian	0.1	---
10,600		Corvallis, Oreg.	(J. R. Hardison - (W. O. Lee	0.5	0.2
3,900		Landisville, Pa.	H. B. Engle	0.2	0.4
3,400		Charleston, S. C.	G. Fassuliotis	0.1	0.2
5,800		Florence, S. C.	T. Graham	0.1	0.5
3,100		Greenville, Tenn.	B. Nichols	0.2	0.2
3,600		Jackson, Tenn.	J. M. Epps	0.2	0.3

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration report.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

ARS - Crops Research Division

Descriptive title of project	Brief description of objectives of project
	<p>Cultural control of nematodes in citrus, cotton, and vegetable crops. )</p> <p>Virus free foundation stocks of citrus. )-</p> <p>Cultural and nonchemical control of weeds in vegetables. )</p> <p>Cultural control of poisonous range weeds. )</p> <p>Control of nematodes of sugarbeets, tree fruits, and forage crops by crop rotation, etc. )-</p> <p>Field practices to control root diseases and curly top. )</p> <p>Cultural practices for control of pod rot of peanuts.</p> <p>Cultural control of weeds in sugarbeets and alfalfa. )</p> <p>Biological control of aquatic weeds in canals and irrigation systems. )-</p> <p>Effect of cultural practices on smut infection and root rot and foliage diseases of wheat. )-</p> <p>Biological and cultural control of weeds for grazing lands. )</p> <p>Biological control of cigar filler tobacco diseases.</p> <p>Control of aquatic weeds through ecological management practices.</p>

May 1965

Fund Assigned/ (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
19,400		Weslaco, Tex.	(VACANCY { - {E. O. Olson (R. M. Menges	0.8	0.2
40,900		Logan, Utah	{ - {M. C. Williams G. D. Griffin (A. Murphy	1.8	2.2
18,700		Holland, Va.	K. Garren	0.7	0.5
41,200		Prosser, Wash.	{ - {J. H. Dawson V. F. Bruns	1.1	1.9
67,200		Pullman, Wash.	{ - {C. S. Holton W. C. Robocker	2.1	2.6
1,500		Madison, Wis.	W. B. Ogden	0.1	--
7,900		Laramie, Wyo.	F. L. Timmons	0.4	0.2

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Genetical and Varietal Resistance of Plants to Insects, Diseases, and Nematodes	<p>This project has the broad objective of reducing the need for pesticides for controlling pests by locating resistant germplasm; working out the genetics, nature, and mechanisms of resistance; and by using this basic knowledge to breed resistant varieties with other desirable characteristics and qualities.</p> <p>Sources and inheritance of nematode and Fusarium wilt resistance in cotton. ) -- Resistance of cotton and soybeans to nematodes. )</p> <p>Nature of resistance to diseases of crop plants.</p> <p>Breeding safflower resistant to Phytophthora root rot.</p> <p>Verticillium wilt resistance in cotton. ) Inheritance of nematode-resistant, extra long staple cotton. ) - Resistance of alfalfa and cotton to nematodes. )</p> <p>Breeding rice resistant to disease and insect pests.</p> <p>Breeding disease-resistant sugarcane and sugarbeets resistant to virus diseases. ) Breeding seed flax resistant to Fusarium wilt. ) - Breeding mildew-resistant lettuce. ) Breeding mildew-resistant melons. )</p> <p>Develop germplasm resistant to yellow dwarf, scald, rust, etc. ) Breeding castorbeans resistant to capsule mold. ) - Nature of disease resistance to Phytophthora root rot in safflower. )</p> <p>Breeding nematode-resistant grape rootstocks.</p> <p>Developing screening method for root rot-resistant citrus rootstocks.</p>



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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project Leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

30,800		Auburn, Ala.	- (R. L. Shepherd R. O. Rebois	1.6	3.0
1,100		Palmer, Alaska	C. E. Lodgsdon	0.1	---
8,300		Mesa, Ariz.	G. Lorance	0.5	0.5
20,100		Tempe, Ariz.	- (L. M. Blank E. L. Turcotte H. W. Reynolds	0.7	0.9
1,400		Stuttgart, Ark.	T. H. Johnston	0.1	---
28,500		Brawley, Calif.	- (K. Beatty B. Beard T. W. Whitaker G. W. Bohn	1.0	1.8
29,500		Davis, Calif.	- (C. A. Suneson L. Zimmerman J. Klisiewicz	0.6	---
31,200		Fresno, Calif.	J. H. Weinburger	1.2	2.0
19,800		Indio, Calif.	J. R. Furr and J. B. Carpenter	0.6	0.3

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division-level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Breeding mildew resistant lettuce. ) Breeding powdery mildew resistant melons. )-
	Breeding sugarbeets resistant to virus yellows and root disease-nematode complex. ) Resistance of sugarbeets to nematodes. )- Breeding lettuce resistant to mosaic. )
	Transfer to upland cotton of Verticillium wilt toler- ance, spider mite, bacterial blight, and nematode resistance.
	Breeding sugarbeets resistant to root and leaf diseases and curly top virus.
	Inheritance and breeding of Colletotrichum resistant kenaf.
	Breed sugarcane resistant to virus diseases and borers.
	Resistance of oats to smut, rust, Helminthosporium ) and other diseases. )- Breeding soybeans resistant to nematodes. )
	Evaluating citrus for root rot and burrowing nematode resistance.
	Breeding root rot resistant peaches. )- Screening methods for pecan scab. )
	Breeding sweet sorghum and sugarcane resistant to leaf spot and stalk diseases.
	Evaluation of plant introductions for resistance to plant pests.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
38,800		La Jolla, Calif.	-(T. W. Whitaker G. W. Bohn	1.0	1.8
104,300		Salinas, Calif.	-(J. McFarlane A. E. Steele E. J. Ryder	5.6	8.5
25,000		Shafter, Calif.	J. H. Turner	1.0	1.0
69,600		Fort Collins, Colo.	J. Gaskill	1.8	5.6
5,000		Belle Glade, Fla.	D. W. Fishler	0.3	0.3
70,100		Canal Point, Fla.	N. James	4.3	3.0
24,800		Gainesville, Fla.	-(H. H. Luke K. Hinson	0.8	0.3
49,800		Orlando, Fla.	-(W. A. Feder and G. R. Grimm	1.5	1.5
39,800		Byron, Ga.	-(H. Fogle VACANCY	1.5	2.5
7,000		Cairo, Ga.	K. Freeman	0.3	0.6
11,900		Experiment, Ga.	G. Sowell	1.0	---

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Breeding peaches for bacterial spot resistance.
	Genetics and physiology of resistance in corn to earworm, rice weevil, corn borer and other insects.)
	Lupines - multiple disease resistance and mechanisms of resistance.)
	Disease and insect resistant- bermudagrass and other warm season grasses.)-
	Sweetpotatoes-developing disease resistant lines.)
	Breeding mimosa resistant to diseases.)
	Resistance of forage crops, grasses, fruit and ornamentals to nematodes.)
	Breeding sugarcane for disease resistance.
	Breeding barley and oats resistant to diseases and pests.)
	Breeding wheat resistant rust, smuts, etc.)-
	Breeding scab and Verticillium wilt resistant potatoes.)
	Breeding onions resistant to thrips and pink root.
	Breeding disease resistant beans.
	Breeding strawberries resistant to leaf diseases.
	Breeding oats resistant to yellow dwarf virus.)
	Breeding soybeans resistant to Phytophthora rot.)-
	Resistance of soybeans to nematodes (except cyst nematode).)
	Develop corn resistant to leaf blight, dwarf mosaic virus, stalk and ear rots, etc.)
	Resistance to cereal leaf beetle.)-
	Breeding soybeans resistant to Phytophthora rot and Frogeye.)
	Breeding scab resistant apples.)

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
2,700		Fort Valley, Ga.	V. E. Prince	0.1	---
			(N. W. Widstrom		
			(I. Forbes		
			(G. W. Burton		
137,200		Tifton, Ga.	- (A. Jones	5.4	6.2
			(D. L. Gill		
			(B. B. Brodie		
8,100		Honolulu, Hawaii	R. Coleman	0.5	0.1
			(F. C. Petr		
13,300		Aberdeen, Idaho	- (D. W. Sunderman	0.8	0.4
			(L. Sanford		
1,900		Parma, Idaho	G. McCollum	0.1	0.1
2,900		Twin Falls, Idaho	W. J. Zaumeyer	--	0.5
4,600		Carbondale, Ill.	R. C. Blake	0.2	0.1
			(H. Jedlinski		
35,600		Urbana, Ill.	- (R. Bernard	1.5	2.0
			(VACANCY		
			(A. J. Ullstrup		
37,500		Lafayette, Ind.	- (R. M. Caldwell	1.1	0.5
			(A. Probst		
			(E. B. Williams		

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Develop corn resistant to corn borer, rust, leaf blight, stalk rot, etc. )
	Develop oats resistant to crown rust. )
	Breeding soybeans resistant to downy mildew. )
	Evaluation of plant introductions for resistance to plant pests. )
	Develop wheat resistant to rusts, viruses, etc. )
	Develop sorghum resistant to smut, charcoal rot, etc. ) -
	Insect resistance in alfalfa. )
	Breed burley and dark-fired tobaccos resistant to root and leaf diseases.
	Develop rice resistant to hoja blanca. )
	Breeding potatoes resistant to scab and late blight. ) -
	Breeding leaf spot-resistant tung.
	Breeding rice resistant to blast, hoja blanca, rice weevil, etc.
	Breeding sugarcane resistant to virus diseases and borers.
	Breeding potatoes resistant to diseases (late blight, scab, viruses, and ring rot).

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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
81,700		Ames, Iowa	(L. H. Penney ( (M. D. Simons (J. Dunleavy (Vacancy	4.7	3.0
51,700		Manhattan, Kans.	(L. E. Browder (L. K. Edmunds (E. L. Sorensen	3.2	2.0
27,500		Lexington, Ky.	C. Litton	1.2	1.2
16,000		Baton Rouge, La.	(H. A. Lamey (T. P. Dykstra	0.8	0.6
5,400		Bogalusa, La.	S. Merrill	0.2	--
5,300		Crowley, La.	N. E. Jodon	0.2	--
65,000		Houma, La.	R. Breaux	2.9	3.5
35,100		Presque Isle, Maine	A. E. Schark	1.3	2.0

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division-level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Resistance to mildew, smut, rust, etc., of barley.
	Resistance to rust and leaf blight of corn.
	Resistance to rusts, viruses, mildew, and septoria, etc. of wheat.
	Rust and virus resistance in oats.
	Blast resistance in rice.
	Weevil resistance in alfalfa.
	Root rot resistance in red and white clover.
	Breeding and genetics of root rot resistance-- birdsfoot trefoil.
	Multiple disease resistance in Kentucky bluegrass and red fescue.
	Breed sugarbeets resistant to blackroot and leaf spot.
	Evaluation of sweet sorghum and sugarcane germplasm resistant to diseases and insects.
	Develop basic tobacco breeding stocks resistant to diseases and nematodes.
	Breeding castorbeans resistant to capsule rot.
	Nature of resistance of plants to nematodes.
	Mechanical, physiological, morphological, and bio- chemical factors determining resistance in plants to diseases and insects.
	Breeding fire blight-resistant pears; and evaluation of pear breeding material for fire blight resistance.
	Breeding black rot-resistant grapes.
	Breeding disease-resistant strawberries.
	Breeding potatoes resistant to scab, late blight, insects, and nematodes.
	Breeding sweet potatoes resistant to wilt.
	Breeding carrots and onions resistant to thrips and pink root.
	Breeding beans and lima beans resistant to rust and downy mildew.
	Breeding spinach resistant to blue mold and white rust.
	Breeding tomatoes resistant to wilts, tobacco mosaic virus and nematodes.
	Breeding roses for blackspot resistance.
	World-wide search for germplasm sources of resistance to plant pests.
	National coordination of evaluation of plant introduc- tions for resistance to plant pests.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.					
Intra-mural	Extra-mural <sup>2/</sup>			Prof. GS-7 & above	Sub-prof.				
<u>Dollars</u>	<u>Dollars</u>								
			(G. A. Wiebe and (J. G. Moseman (G. F. Sprague (L. P. Reitz and (W. Q. Loegering (H. C. Murphy (C. R. Adair (C. H. Hanson (R. C. Leffel (P. R. Henson ( (A. A. Hanson ( (D. Stewart (I. E. Stokes ( 971,000		Beltsville, Md.	-	(L. Burk ( (C. Thomas (J. M. Good ( (M. E. Mace ( (H. J. Brooks (J. R. McGrew (D. H. Scott ( (R. V. Akeley (C. E. Steinbauer (E. W. Davis ( (W. J. Zaumeyer (R. E. Webb ( (D. W. Davis (R. Stewart ( (H. L. Hyland (A. J. Oakes and (H. F. Winters	34.2	50.7

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Sources of resistance to cereal leaf beetle.
	Effect of nematodes and environmental influences on the incidence of nematode injury to soybeans.
	Assemble and evaluate grape species for black rot resistance.
	Basic pathological research on virus yellows of sugarbeets.
	Nature of disease resistance in flax to rust.
	Nature of disease resistance to apple scab.
	Nature of resistance to European corn borer.
	Nature of resistance to sweet clover weevil.
	Nature of resistance in alfalfa to spotted aphid and pea aphid.
	Nature of resistance in potatoes to leafhoppers, flea beetles and aphids.
	Nature of resistance in alfalfa to stem nematode.
	Resistance in pea to stem nematode.
	Screening peanut germplasm for resistance to the Southern corn rootworm.

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Fund Assigned <sup>1</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
	14,000(c)	Mich. Agr. Expt. Sta., East Lansing, Mich.	G. A. Wiebe	--	--
	1,800(c)	Purdue Univ. Lafayette, Ind.	J. M. Good	--	--
	13,900(c)	Illinois Agr. Expt. Sta., Urbana, Ill.	D. H. Scott	--	--
	23,200(c)	Calif. Agr. Expt. Sta., Berkeley, Calif.	D. Stewart	--	--
	90,200(g)	N. Dakota Agr. Expt. Sta., Fargo, N. Dak.	H. H. Flor	--	--
	135,200(c)	Purdue Univ., Lafayette, Ind.	H. J. Brooks	--	--
	67,600(g)	Iowa State Univ., Ames, Iowa	G. F. Sprague	--	--
	33,800(g)	Univ. of Nebr., Lincoln, Nebr.	C. R. Leffel	--	--
	88,800(c)	Nevada Agr. Expt. Sta., Reno, Nev.	C. H. Hanson	--	--
	45,100(g)	Iowa State Univ., Ames, Iowa	R. V. Akeley	--	--
	54,100(c)	N. C. Agr. Expt. Sta., Raleigh, N. C.	C. H. Hanson	--	--
	54,100(c)	Md. Agr. Expt. Sta., College Park, Md.	J. M. Good	--	--
	10,000(c)	N. C. Agr. Expt. Sta., Raleigh, N. C.	W. K. Bailey	--	--

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Screening peanut germplasm for resistance to the Southern corn rootworm.
	Quarantine indexing and propagation of introduced pome fruits
	Breeding Maryland tobacco resistant to root and leaf diseases.
	Resistance to cereal leaf beetle in barley, oats, and wheat. )
	Breeding sugarbeets resistant to root diseases and leafspot. ) -
	Breeding beans resistant to root rots and mosaic. )
	Rust resistance in wheat and oats. )
	Sugarbeets - develop improved inoculation techniques for leafspot. ) -
	Breeding seed flax resistant to rust. )
	Screening alfalfa for virus resistance. )
	Breeding grapes for resistance to Pierces' disease. )
	Develop sweet sorghum and sugarcane resistant to leaf and stalk diseases. ) -
	Breeding corn resistant to corn stunt, earworm, borer, etc. )
	Nature and inheritance of boll weevil resistance in cotton. ) -
	Selection for sooty blotch, resistance in crimson clover. )
	Rust and leafspot resistance in ryegrass. )

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Fund assigned <sup>1/</sup> (project level)		Locations of work	Project leaders	Man-yrs. on proj.	
Intra-mural	Extra-mural <sup>2/</sup>			Prof. GS-7 & above	Sub-prof.
<u>Dollars</u>	<u>Dollars</u>				
	10,000(c)	Georgia Agr. Exp. Stat., Tifton, Ga.	W. K. Bailey	--	--
46,800		Glenn Dale, Md.	H. Waterworth	1.0	3.0
13,600		Upper Marlboro, Md.	H. Skoog	0.5	0.5
51,400		East Lansing, Mich. - (D. H. Smith (G. Hogaboam (Vacancy		1.6	2.7
127,600		St. Paul, Minn. - (R. W. Romig (L. Calpouzos (V. Comstock (F. I. Frosheiser		5.7	7.1
40,500		Meridian, Miss. (N. H. Loomis (O. Coleman		2.0	1.8
183,900		State College, Miss. (C. O. Grogan (J. N. Jenkins (W. E. Knight (H. W. Bennett		6.2	10.1

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Resistance of oats to yellow dwarf, soilborne mosaic, etc. )
	Inheritance of cotton plant characters affecting lepidopterous insects. )
	Breeding and mechanisms of root rot resistance-alfalfa; multiple disease resistance in southern legumes; and resistance to foliar diseases in sudangrass and ryegrass. )
	Breeding soybeans resistant to Phytophthora rot. )
	Breeding castorbeans resistant to capsule mold and breeding sesame resistant to bacterial leafspot. )
	Breeding corn for resistance to diseases and insects. )
	Wheat genetics research leading to disease resistant germplasm and breeding methods. )
	Selecting for crown and root rot resistance in birds-foot trefoil. )
	Breeding soybeans for resistance to cyst nematode. )
	Breeding wheat resistant to sawfly, stripe mosaic, smut, etc. )
	Breeding wheat resistant to diseases and insects. )
	Breeding and genetics of disease resistance in grain sorghum. )
	Inheritance of insect resistance in alfalfa. )
	Genetics of weevil resistance in sweet clover. )
	Breeding safflower for rust resistance. )
	Insect, nematode, and disease resistance - alfalfa. )
	Transfer of Verticillium wilt tolerance to cotton. )
	Evaluation of plant introductions for resistance to plant pests. )
	Developing potatoes resistant to golden nematode and disease resistant onion and carrot hybrids. )
	Developing flue cured tobacco resistant to diseases and nematodes. )

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Fund Assigned1/ (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
37,800		Stoneville, Miss.	(R. G. Rothman ( (W. R. Meredith ( (H. W. Johnson ( ( (E. Hartwig (T. Culp	2.4	1.5
27,800		Columbia, Mo.	(M. S. Zuber (E. R. Sears ( (J. D. Baldrige ( (VACANCY	1.6	--
18,200		Bozeman, Mont.	F. H. McNeal	1.4	--
25,700		Lincoln, Nebr.	(V. A. Johnson (P. T. Nordquist ( (W. R. Kehr (H. J. Gorz	1.2	0.7
1,400		Mitchell, Nebr.	W. Peterson	0.1	--
22,500		Reno, Nev.	H. L. Carnahan	1.5	--
14,000		University Park, N. Mex.	J. R. Cotton	1.0	1.7
14,100		Geneva, N. Y.	S. Braverman	1.0	--
3,300		Ithaca, N. Y.	L. C. Peterson	--	--
63,300		Oxford, N. C.	R. Gwynn	1.1	3.5

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Developing barley resistant to scald, septoria, Helminthosporium, and other diseases.	)
Developing corn resistant to leaf blights, stalk rots, and other diseases.	)
Mechanism of weevil and nematode resistance - alflafa.	)
Resistance to foliar diseases and root rots in lespedeza.	)
Breeding soybeans for cyst nematode resistance.	)
Inheritance of plant characters affecting insects in cotton.	)
Develop flue cured tobacco resistant to diseases and nematodes.	)
Develop burley tobacco resistant to root and leaf diseases.	
Develop barley resistant to stripe mosaic, yellow dwarf, etc.	)
Develop spring wheat resistant to rust, black point, sawfly, etc.	)
Breeding seed flax resistant to rust.	)
Breeding elms resistant to Dutch elm disease and phloem necrosis.	
Evaluate quality of pest resistant genetic stocks and selections of wheat.	)
Develop corn resistant to maize, dwarf mosaic, blight, etc.	)
Interspecies hybrids as sources of resistance to mosaic and other wheat diseases.	)
Transfer of bacterial blight and Fusarium wilt toler- ance to cotton.	)
Breeding peanuts for resistance to nematodes.	)
Bunt disease resistance in wheat.	)
Breeding hops for downy mildew resistance.)	)
Breeding root rot resistant strawberries.)	)
Develop cigar filler tobacco resistant to root and leaf diseases.	

May 1965

Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7& above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
105,300		Raleigh, N. C.	(D. M. Kline ( (D. L. Thompson ( (V. Ludley - (W. A. Cope ( (C. Brim and (J. Rose (J. A. Lee (H. Seltmann	5.1	3.1
7,200		Waynesville, N. C.	L. Shaw	0.3	0.3
136,500		Fargo, N. Dak.	(R. G. Timian ( (K. L. Lebsock - (H. Flor	5.7	4.4
40,600		Delaware, Ohio	L. Schreiber	1.5	1.5
21,700		Wooster, Ohio	(W. Yamazaki ( (W. R. Findley	1.3	--
53,800		Stillwater, Okla.	(E. Sebesta ( (J. C. Murray - (VACANCY	2.3	1.3
76,300		Corvallis, Oreg.	(R. J. Metzger (S. Brooks - (G. F. Waldo	3.1	2.0
7,800		Landisville, Pa.	H. Engle	0.4	0.8

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	<p>Mechanism of leaf spot and insect resistance in alfalfa.)  Mechanism of internal breakdown in red clover. ) -</p> <p>Resistance and nature of resistance of cucurbits and)  other vegetables to nematodes. )  Breeding tomatoes, sweet corn, beans, cucurbits for ) -  resistance to diseases, insects, and nematodes. )</p> <p>Genetics and mechanism of resistance to nematodes  and root rots - white clover.</p> <p>Develop basic tobacco breeding stocks resistant to  nematodes and diseases.</p> <p>Develop cereals resistant to insects and insect-  transmitted diseases.</p> <p>Develop burley tobacco resistant to root and leaf  diseases.</p> <p>Resistance of soybean to cyst nematode.</p> <p>Develop corn resistant to smut, stalk rot, earworm, corn  borer, corn stunt, etc.</p> <p>Develop rice resistant to blast, hoja blanca, white tip,  straight head, etc.</p> <p>Lepidopterous insect resistance in cotton.</p> <p>Inheritance and transfer of lepidopterous insect )  resistance in cotton. )  Develop wheat and oats resistant to greenbug, rusts, ) -  viruses, smuts, etc. )  Breeding sunflower for headmoth resistance; guar )  resistant to bacteria. )</p> <p>Breeding carrots resistant to anthracnose and Cercospora.</p>

May 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
49,600		University Park, Pa.	(R. R. Hill (J. H. Graham	0.9	3.0
			(G. Fassuliotis		
185,500		Charleston, S.C.	-- (C. F. Andrus	5.3	12.6
5,000		Clemson, S. C.	P. B. Gibson	0.2	0.1
38,700		Florence, S.C.	J. Chaplin	1.5	2.2
93,000		College Station, S. Dak.	P. J. Fitzgerald and S.G. Jensen	3.0	5.0
24,200		Greenville, Tenn.	L. Hoffbeck	1.0	1.4
10,200		Jackson, Tenn.	J. M. Epps	0.6	0.8
6,200		Knoxville, Tenn.	L. M. Josephson	0.4	---
26,100		Beaumont, Tex.	C. N. Bollich and J.G. Atkins	1.2	1.2
15,300		Brownsville, Tex.	Vacancy	1.0	---
			(T. R. Richmond		
84,700		College Station, Tex.	(I.M. Atkins and (R.A. Kilpatrick (M. Kinman	4.0	3.0
2,400		Weslaco, Tex.	D. H. McLean	0.1	0.1

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	<p>Nematode resistance in alfalfa. )</p> <p>Screening sugarbeet breeding stocks for curly top )</p> <p>resistance. )-</p> <p>Breeding safflower resistant to rust. )</p> <p>Resistance of alfalfa and sugarbeets to nematodes. )</p> <p>Breeding tomatoes for curly top resistance. )</p> <p>Genetics of root rot resistance - birdsfoot trefoil.</p> <p>Breeding peanuts resistant to southern corn rootworm.</p> <p>Breeding potatoes resistant to scab. )</p> <p>Breeding beans resistant to curly top, root rot, )-</p> <p>and nematodes. )</p> <p>Develop wheat resistant to smuts, stripe rust, mil- )</p> <p>dew, root rots, etc. )</p> <p>Develop oats resistant to smuts. )</p> <p>Breeding dry peas and lentils for root rot resistance. )</p> <p>Evaluation of plant introductions for resistance to )</p> <p>plant pests. )</p> <p>Develop barley resistant to Hessian fly, smuts, rust, )</p> <p>septoria, etc. )</p> <p>Develop corn resistant to leaf blights, stalk rots, )</p> <p>etc. )</p> <p>Selection for resistance to root borer-virus complex )-</p> <p>in red clover. )</p> <p>Develop cigar filler tobacco resistant to root and )</p> <p>leaf diseases. )</p> <p>Solanum germ plasm for resistance to diseases, )</p> <p>insects, and nematodes. )</p> <p>Breeding tomatoes resistant to bacterial canker.</p> <p>Evaluating wheat and oats for resistance to rust.</p>

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Fund Assigned1/ (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
73,800		Logan, Utah	(M. W. Pedersen (A. Murphy - (L. Leininger (G. D. Griffin (M. Martin	5.0	4.1
2,100		Blacksburg, Va.	J. D. Miller	0.1	---
53,300		Holland, Va.	VACANCY	2.0	4.0
60,500		Prosser, Wash.	(W. Hoyman - (D. J. Burke	2.8	2.9
116,800		Pullman, Wash.	(O. A. Vogel ( (C. S. Holton - (V. Wilson (S. M. Dietz	5.6	---
32,600		Madison, Wis.	(R. G. Shands ( (P. E. Hoppe ( - (W. K. Smith ( (W. Ogden ( (P. R. Rowe	1.9	---
4,900		Cheyenne, Wyo.	B. Thyre	0.2	0.4
22,000		Mayaguez, P. R.	D. M. McVey	1.0	2.0

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Basic Research to Avoid or Minimize Pesticide Hazards	<p>The objectives of basic research on plant diseases and nematodes and weeds are designed to develop safe methods of control through research on the biology, taxonomy, ecology, physiology, pathology, epidemiology, and metabolic processes of these pests, and through research on the metabolism of pesticides in plants.</p> <p>Pathology of Fusarium wilt, Ascochyta blight, and seedling diseases of cotton.</p> <p>Physiological and epidemiological studies on plant diseases and insect transmission studies.</p> <p>Ecological studies of range weeds and brush (juniper).</p> <p>Strains of virus diseases of sugarbeets. )  Pathological studies on cantaloupe diseases.) -</p> <p>Effect of environment to disease expression in long- )  staple cotton. ) -  Studies on cotton rust life cycle. )</p> <p>Auto- and syn-ecological studies of brush species.)  Pathology studies on cantaloupe diseases.) -</p> <p>Aquatic weed control in farm ponds and streams, primarily water stargrass. (Being closed out.)</p> <p>Environmental factors affecting incidence of seedling diseases in cotton.</p> <p>Mechanism of action of herbicides in weeds in rice and factors affecting penetration, absorption, and translocation of herbicides.</p>

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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

21,000		Auburn, Ala.	A. J. Kappelman	0.8	1.6
6,200		Palmer, Alaska	C. E. Logsdon	0.4	---
4,000		Flagstaff, Ariz.	T. N. Johnson	0.2	0.2
21,400		Mesa, Ariz.	(E. Ruppel (R. Webb	0.5	2.0
31,000		Tempe, Ariz.	(Vacancy (L. M. Blank	1.2	2.2
6,100		Tucson, Ariz.	(H. M. Hull (R. Webb	0.1	---
6,500		Clarkedale, Ark.	Vacancy	0.5	---
6,500		Fayetteville, Ark.	K. Bollenbacher	0.5	---
4,600		Stuttgart, Ark.	R. J. Smith	0.3	---

<sup>1/</sup> Not budget level--funds allocated to location excludes  
ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Physiology of the cotton plant - Verticillium wilt) interatcion. ) Biology of castorbean capsule mold (Botrytis). ) Biology of safflower root rot (Phytophthora). )- Life history and ecology of aquatic weeds in large ) canals. ) Epidemiology of grape viruses. )  Epidemiology of citrus viruses.  Pathology of powdery mildew of cantaloupe.  Epidemiology of pear decline and stone fruit virus diseases.  Hatching factors in sugarbeet cyst nematode.)- Sugarbeet virus strains and host range. )  Penetration, absorption, translocation, and precision placement of herbicides.  Physiology of aquatic weeds and degradation of herbicides in water and aquatic soils.  Biochemistry of parasitism - sugarbeet leaf spot.)- Physiology of weeds in sugarbeet fields. )  Pathology and ecology of Verticillium wilt and viruses of potato.  Physiology of sugarcane disease organisms.  Physiology of aquatic weeds in southern waterways.  Physiology and biochemistry of parasitism - Helminthosporium blight of oats.  Ecology and movement of burrowing nematode and other ) citrus nematodes. )- Epidemiology of citrus virus diseases. )

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
83,900		Davis, Calif.	(O. E. Smith and (W. C. Schnathorst (J. Klisiewicz -(J. Klisiewicz (R. R. Yeo ( (A. Goheen	3.9	3.5
27,300		Indio, Calif.	J. B. Carpenter	0.7	0.7
19,400		La Jolla, Calif.	G. W. Bohn	0.5	1.0
21,400		Riverside, Calif.	T. S. Pine	1.0	2.0
34,500		Salinas, Calif.	-(A. E. Steele (J. Duffus	1.7	2.2
2,800		Shafter, Calif.	J. H. Miller	0.2	---
2,900		Denver, Colo.	P. A. Frank	0.4	0.4
32,200		Fort Collins, Colo.	-(M. Harrison (E. E. Schweizer	1.2	1.2
39,500		Greeley, Colo.	S. A. Alfieri	1.5	2.5
3,900		Canal Point, Fla.	L. Hebert	0.3	0.5
300		Ft. Lauderdale, Fla.	L. W. Weldon	---	---
8,700		Gainesville, Fla.	H. H. Luke	0.5	---
91,000		Orlando, Fla.	(J. H. O'Bannon -( (J. F. L. Childs and (S. Garnsey	2.3	2.6

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Etiology of short life of peach orchards.
	Controlling plant diseases and weeds in sugarcane and sweet sorghum.
	Physiology and pathology of root rots and leaf diseases of lupines; pathogenicity and epidemiology of leaf spot of bermudagrass.
	Precision placement of herbicides and penetration, absorption and translocation.
	Physiology and ecology of weeds in vegetables and means of avoiding residues.
	Pathology of Fusarium wilt and virus diseases of cowpea.
	Serology of bacterial spot of tomatoes and peppers.
	Identity and control of diseases of ornamental plants.
	Pathology, ecology, distribution and disease association of nematodes on vegetables, peanuts, fruit, ornamentals, forage crops, small grains and turf.
	Physiology of sugarcane disease organisms.
	Ecology of range weeds.
	Nature, epidemiology, and losses from oat virus diseases (yellow dwarf).
	Biology of bacterial pustule and bacterial blight of soybeans.
	Physiology and development of new principles for weed control in soybeans and other crops in rotation.
	Ecology of soybean nematodes.
	Factors in rhizosphere affecting stalk and root rots.
	Competition and other relations of weeds in pastures (giant foxtail and Canada thistle).

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
13,900		Byron, Ga.	VACANCY	0.5	0.5
2,300		Cairo, Ga.	K. Freeman	0.1	0.2
			(H. D. Wells		
			(		
			(R. B. Taylorson		
			(		
109,700		Tifton, Ga.	(E. W. Hansen	4.7	4.7
			(R. W. Toler		
			(		
			(D. J. Morton		
			(D. L. Gill		
			(		
			(B. B. Brodie		
2,200		Honolulu, Hawaii	R. Coleman	0.1	0.1
1,600		Twin Falls, Idaho	G. J. Klomp	0.1	---
			(H. Jedlinski		
			(		
63,200		Urbana, Ill.	(D. Chamberlain	2.4	2.5
			(		
			(L. Wax		
			(		
			(VACANCY		
16,000			(A. J. Ullstrup		
			-(M. M. Schreiber	0.9	0.5

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	<p>Epidemiology and measurement of losses - crown rust of oats. )</p> <p>Biology of stem canker and downy mildew of soybeans. )-</p> <p>Relation of meteorological conditions to plant disease outbreaks - barley yellow dwarf, late blight of potatoes. )</p> <p>Epidemiology of wheat rusts. )</p> <p>Sorghum diseases-infection processes and effect of environment. )-</p> <p>Nature of root diseases in tobacco.</p> <p>Virus-vector relationships - hoja blanca disease of rice. )</p> <p>Life history and ecology of sugarcane and cotton (reniform) nematodes. )-</p> <p>Potato scab and late blight. )</p> <p>Epidemiology of tung diseases.</p> <p>Pathology and physiology of sugarcane diseases related to pest control.</p> <p>Etiology of bunch disease of pecan.</p> <p>Strains of the potato late blight fungus.</p>

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
57,200		Ames, Iowa	(M. D. Simons (J. Dunleavy and (H. Tachibana (J. R. Wallen	2.7	1.0
30,000		Manhattan, Kans.	(J. R. Burleigh (L. K. Edmunds	1.4	1.4
13,100		Lexington, Ky.	J. Hendrix	0.1	---
20,900		Baton Rouge, La.	(H. A. Lamey (W. Birchfield (T. P. Dykstra	1.0	0.6
16,600		Bogalusa, La.	T. van der Zwet	0.5	---
29,400		Houma, La.	E. V. Abbott	1.4	1.0
20,000		Shreveport, La.	G. E. KenKnight	0.8	0.8
5,400		Presque, Isle, Maine	A. E. Schark	0.2	0.2

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	<p>Identity and distribution of barley diseases, mutability, and other characteristics of pathogens</p> <p>Epidemiology and physiology of parasitism of wheat rust and Septoria.</p> <p>Epidemiology of rusts and viruses of oats</p> <p>Physiology of the cotton plant - Verticillium wilt interaction.</p> <p>Disease-physiology interaction in persistence of red clover.</p> <p>Strains and host range of sugarbeet pathogens.</p> <p>Identity, life history, and pathogenicity of birds-foot trefoil diseases.</p> <p>Ecological relationships of diseases of Kentucky bluegrass.</p> <p>Tobacco leaf spot.</p> <p>Biology of Phytophthora root rot of safflower; capsule mold of castorbean.</p> <p>Methods for control of virus diseases of sugarcane.</p> <p>Penetration, absorption, and translocation of herbicides.</p> <p>Ecology and life history of weeds under controlled environment.</p> <p>Phenological and ecological studies of weed species.</p> <p>Taxonomy of nematodes</p> <p>Host-parasite relations with nematodes.</p> <p>Plant disease reporting.</p> <p>Taxonomy of fungi.</p> <p>Purification and identification by serology of potato spindle tuber virus</p> <p>Purification and identification of sweetpotato cork and related viruses.</p> <p>Races of bean anthracnose and rust, downy mildew and control of halo blight.</p> <p>Interaction of tobacco mosaic virus with other tomato viruses and pathology of bacterial spot of peppers.</p> <p>Strains of cucurbit viruses.</p> <p>Purification and identification by serology of lily viruses.</p> <p>Methods of infection and pathological histology of Dutch elm disease.</p> <p>Plant viruses - electron microscopy, serology, biochemistry and physiology of diseased plants.</p>

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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

(J. G. Moseman

(W. Q. Loegering and

( A. L. Scharen

(H. C. Murphy

(H. R. Carns

(R. C. Leffel

(D. Stewart

(S. A. Ostazeski

(F. V. Juska

(H. Menser

(C. Thomas and

(R. Orellana

(S. Price

(L. L. Jansen

(L. L. Danielson

(H. D. Kerr

(M. Golden

(V. H. Dropkin

(P. R. Miller

(C. R. Benjamin

(W. B. Raymer

(E. M. Hildebrand

(W. J. Zaumeyer

(R. E. Webb

(R. E. Webb

(R. L. Lawson

(C. May

(R. L. Steere

1,004,400

Beltsville, Md. --(

39.1

41.7

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Plant physiological studies related to cereal leaf beetle.
	Improved practices for controlling Johnsongrass in soybeans.
	Distribution, pathogenicity, disease interactions, and effects on soybeans of selected nematodes.
	Effect of nematode populations and environmental influences on nematode injury to soybeans.
	Cold injury in relation to the short life of peach trees.
	Chemical constituents of sugarbeet influencing technical value and keeping quality of roots.
	Presence of mycotoxins in peanuts, cotton, and soybeans.
	Investigations on black point disease of durum wheat.
	Physiological effects of cereal leaf beetle feeding; ) time and level of infestation on losses. ) Pathology of halo blight of beans and methods of )- control. ) Strains of sugarbeet virus and fungus pathogens. )
	Ecology, epidemiology, and physiology of host - ) pathogen interaction - cereal rusts. ) Epidemiology and metabolic processes of alfalfa )- viruses. ) Strains of sugarbeet leaf spot fungus. )

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
	9,300(c)	Mich. Agr. Expt. Sta., East Lansing, Mich.	G. A. Wiebe	--	--
	7,800(c)	Univ. of Missouri, Columbia, Mo.	J. T. Holston, Jr.	--	--
	20,100(c)	Auburn Univ. Agr. Expt. Sta., Auburn, Ala.	J. M. Good	--	--
	7,800(c)	Purdue Univ., Lafayette, Ind.	J. M. Good	--	--
	27,800(c)	Georgia Agr. Expt. Sta., Experiment, Ga.	H. W. Fogle	--	--
	23,200(c)	Colorado Agr. Expt. Sta., Ft. Collins, Colo.	D. Stewart	--	--
	32,100(c)	Va. Agr. Expt. Sta., Blacksburg, Va.	(P. Marsh and W. K. Bailey)	--	--
	23,200(c)	North Dakota Agr. Expt. Sta., Fargo, N. Dak.	L. P. Reitz	--	--
26,800		East Lansing, Mich.	(D. H. Smith (VACANCY (D. Mumford	1.2	1.1
55,400		St. Paul, Minn.	(R. W. Romig (F. I. Frosheiser (L. Calpouzos	2.7	1.4

- 1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.
- 2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Methods of control of sweet sorghum leaf and stalk diseases and weeds.
	Nature of corn stunt virus and virus-vector relationships. )
	Methodology studies for evaluating Verticillium and Fusarium wilt in cotton. )
	Effect of insecticides on biochemical and physiological systems in cotton. )
	Pathogenicity of root rots of alfalfa; Identity and taxonomy of pathogens of southern legumes; Identity and pathogenicity of leaf diseases of sudangrass and rye grass. )
	Penetration, absorption, translocation and precision placement of herbicides; physiology and ecology of weeds. )
	Biology of Phytophthora rot of soybeans. )
	Ecology of weeds in pastures (ironweed, broomsedge, etc.).
	Ecology and life history of aquatic and bank weeds including varieties of Canada thistle.
	Serological, biochemical, and physiological nature of wheat and barley viruses. )
	Phenology, ecology, physiology of pasture weeds. )
	Ecology of range weeds.
	Pathogenicity and epidemiology of diseases of white clover and their interaction with insects.
	Physiology of weeds in horticultural crops. )
	Epidemiology of blueberry virus diseases. )
	Physiology of phreatophytes, largely salt cedar.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
13,100		Meridian, Miss.	J. Dean	0.6	0.8
23,200		State College, Miss.	(E. E. Rosenkranz (A. B. Wiles	1.5	1.0
34,500		Stoneville, Miss.	(B. A. Roark (H. W. Johnson (C. G. McWhorter (F. Morgan	2.7	1.1
4,700		Columbia, Mo.	E. J. Peters	0.2	0.2
10,400		Bozeman, Mont.	J. M. Hodgson	0.5	0.5
47,500		Lincoln, Nebr.	(M. K. Brakke (M. K. McCarty	2.4	1.4
4,200		Reno, Nev.	R. A. Evans	0.4	0.2
19,000		Durham, N. H.	VACANCY	1.0	1.0
10,300		New Brunswick, N. J.	(W. V. Welker (A. W. Stretch	0.9	---
8,700		Los Lunas, N. Mex.	E. E. Hughes	0.4	0.4

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Host-vector relationships in yellow dwarf of oats.) Degradation of herbicides in plants and forage, and )- other practices to reduce residue hazards. )
	Nature of root and leaf diseases of tobacco.
	Identity, prevalence and genetic characteristics of ) barley pathogens. ) Relation of seedling injury in cotton to seedling ) disease infection (Pythium). ) Prevalence and pathogenicity of alfalfa pathogens. )- Ecological relationships of lespedeza diseases. ) Virus diseases of soybeans. ) Procedures for forecasting plant disease outbreaks ) including downy mildew of tobacco and cucurbits ) and bacterial spot of peppers and tomatoes. )
	Nature of barley viruses and the infection-process. )- Metabolic pathways and fate of pesticides in plants.)
	Physiological and ecological studies of shade tree diseases, esp. Dutch elm disease.
	Nature of cotton bacterial blight mutation. ) Ecologic and edaphic studies of brush in pastures )- and rangeland. )
	Physiology and <b>metabolic</b> requirements of wheat smut.) Identity and pathogenicity of seed-borne diseases of ) grasses and legumes. ) Biology of Hop downy mildew. )- Ecological relations of weeds of forage seed crops. ) Develop virus free strawberries. ) Identification of pea and bean viruses by electron ) microscopy and serology. )
	Epidemiology of pear diseases.
	Pathogenicity and epidemiology of leaf spots and ) bacterial wilts of alfalfa; ecology, physiology ) and pathogenicity of internal breakdown in red )- clover. ) Methods of forecasting outbreaks and spread of downy ) mildew of potatoes, tomatoes and lima beans. )

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
39,100		Ithaca, N. Y.	(W. Rochow -(D. L. Linscott	1.7	1.7
29,900		Oxford, N. C.	C. Main	0.9	1.2
			(D. M. Kline ( (J. R. Mauney (		
46,000		Raleigh, N. C.	-(R. T. Sherwood (W. A. Cope (J. Ross (L. H. Person	2.4	0.9
389,700		Fargo, N. Dak.	-(R. G. Timian (C. R. Swanson	10.1	19.0
67,600		Delaware, Ohio	L. Schreiber	2.5	2.5
14,700		Stillwater, Okla.	-(L. A. Brinkerhoff (H. M. Elwell	1.0	0.2
			(E. J. Trione (J. R. Hardison (		
52,600		Corvallis, Oreg.	-(C. Horner (W. O. Lee (P. W. Miller (R. E. Ford and (W. McWhorter	2.8	1.3
7,500		Hood River, Oreg.	D. L. Coyier	0.5	0.5
			(J. H. Graham (		
41,600		University Park, Pa.	-( ( (R. A. Hyre	1.6	1.5

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Studies of nematode biotypes.
	Epidemiology of peach bacterial canker and crown rot.
	Basic studies on root diseases of tobacco.
	Physiological effects of wheat rust and infection ) process of wheat blackpoint disease. )
	Absorption, translocation, and metabolism of systemic ) pesticides in cotton. )
	Pathology of Fusarium and Verticillium wilts, bacterial ) - blight and seedling disease organisms of cotton. )
	Physiology and morphology of rangeland brush and ) development of new controls and degradation and fate ) of herbicides in plants and soils. )
	Environment in relation to epidemiology and physiology of Verticillium wilt, bacterial blight, and seedling diseases of cotton.
	Ecology of vegetable crop weeds and new methods of ) control to avoid residues. )
	Ecology, distribution and occurrence of citrus and ) vegetable nematodes. ) -
	Relation of citrus diseases to cold hardiness. )
	Identification and study of carrot foliage diseases.)
	Identification and study of spinach foliage diseases ) (blue mold and white rust). )
	Strains of curly top virus on sugarbeets. )
	Ecological relationships of diseases of grass seedlings.)
	Safflower - Phytophthora rot and rust. )
	Phenology and ecology of rangeland weeds; physiology of ) - alkaloid content of poisonous weeds; alternate methods ) of control. )
	Ecology of nematodes of sugarbeets, deciduous trees, ) and forage crops. )
	Epidemiology of stone fruit virus diseases. )
	Microfloral succession of molds (Aspergillus, etc.) on peanuts.

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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
3,400		Charleston, S.C.	G. Fassuliotis	0.1	0.2
29,500		Clemson, S. C.	D. H. Peterson and W. M. Dowler	1.7	0.8
2,100		Florence, S.C.	T. Graham	0.1	0.1
70,300		College Station, Tex.	( R. A. Kilpatrick ( J. Hackskaylo ( Vacancy ( H. L. Morton	3.6	2.5
26,100		Lubbock, Tex.	Vacancy	1.0	2.0
39,800		Weslaco, Tex.	( R. M. Menges ( Vacancy ( E. O. Olson ( D. M. McLean ( D. M. McLean	2.2	1.4
59,800		Logan, Utah	( C. Schneider ( A. T. Bleak ( D. Zimmer ( M. C. Williams ( ( G. D. Griffin ( B. N. Wadley	3.8	0.7
5,300		Holland, Va.	K. Garren	0.2	----

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Physiology of dodder and weeds in sugarbeets and development of safe control measures. ) Identification of mosaic viruses and nematodes of beans and peas. ) - Studies on strains of curly top virus of tomatoes. )  Infection process and role of environmental factors in wheat smut, root rot, etc. ) Ecology and control of range weeds (skeleton weed). ) - Identification and biology of dry pea and lentil diseases. )  Epidemiology of stone fruit virus diseases.  Identity and study of metabolic products of microbial origin on barley. ) - Physiology of pathogenesis - oat diseases. ) Epidemiology of stone fruit viruses. )  Epidemiology of stone fruit viruses.  Identification and pathology of bacterial canker of tomatoes.  Ecology and physiology of aquatic and ditchbank weeds in irrigation ditches. Survey of harmful insects on papaya.  Improved Conventional Pesticides and Methods of Application: Diseases and Nematodes To develop information to assure the safe use of conventional pesticides for control of plant diseases and nematodes and to develop less hazardous fungicides, nematocides, bactericides, and viricides.  Fungicides for control of cotton Fusarium wilt, Ascochyta blight, and seedling disease. ) - Evaluate nematocides and develop chemical controls for cotton nematodes. )  Fungicidal control of plant diseases.

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Fund assigned <sup>1/</sup> (project level)		Locations of work - City and State	Project leaders	Man-yrs. on proj.	
Intra-mural	Extra-mural <sup>2/</sup>			Prof. GS-7 & above	Sub-prof.
<u>Dollars</u>	<u>Dollars</u>				
50,300		Prosser, Wash.	{ J. H. Dawson { D. Burke { R. Clark	2.4	2.9
33,700		Pullman, Wash.	{ C. S. Holton { W. C. Robocker { V. Wilson	1.7	0.3
28,000		Wenatchee, Wash.	H. C. Kirkpatrick	2.0	---
25,500		Madison, Wis.	{ N. Prentice { R. D. Durbin { J. D. Moore	1.4	---
6,500		Sturgeon Bay, Wis.	J. D. Moore	---	1.0
11,900		Cheyenne, Wyo.	B. D. Thyr	0.6	0.3
17,100		Laramie, Wyo.	F. L. Timmons	0.7	1.4
5,200		St. Croix, Virgin Islands	R. M. Bond	0.2	---
6,800		Auburn, Ala.	{ A. J. Kappelman { R. O. Rebois	0.4	0.4
1,500		Palmer, Alaska	C. E. Logsdon	0.1	---

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	<p>Fungicides for control of cotton rust and seedling diseases under irrigation. )</p> <p>Nematocidal control of rootknot, etc. in cotton and citrus nematode. )-</p> <p>Fungicides for control of cotton seedling diseases.</p> <p>Safflower seed treatment for rust.</p> <p>Evaluate chemicals for controlling nematodes in vegetables and sugarbeets.</p> <p>Fungicides for cotton Verticillium wilt, )</p> <p>Thielaveopsis root rot, cotton boll rots. )-</p> <p>Nematode control in cotton. )</p> <p>Nontoxic, nontranslocatable fungicides for sugarbeet seedling root disease control.</p> <p>Fungicide control of root diseases of Sansieveria and Kenaf.</p> <p>Chemical control of citrus &amp; ornamental plant )</p> <p>nematodes and nematode-fungus complex in citrus. )-</p> <p>New chemical for control of crown rot of citrus. )</p> <p>Chemical control of pecan scab.</p> <p>Fungicide control of cotton seedling diseases.</p> <p>Fungicides for control of turf diseases and seed- )</p> <p>borne pathogens of forage grasses. )-</p> <p>Nematode control in vegetables, forages, turf, and )</p> <p>nursery stock. )</p> <p>Chemical control of soybean nematodes.</p> <p>Soybean seed treatment for disease control.</p> <p>Fungicidal control of wheat rust.</p> <p>Fungicide-seed treatment and sprays to control rice diseases.</p>

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
38,600		Tempe, Ariz.	(L. M. Blank - (H. W. Reynolds	1.2	2.1
6,500		Fayetteville, Ark.	K. Bollenbacher	0.5	---
1,000		Davis, Calif.	J. Klisiewicz	0.1	---
2,300		Salinas, Calif.	A. E. Steele	0.1	0.1
35,600		Shafter, Calif.	(R. H. Garber - (F. Caveness	1.5	1.0
3,000		Fort Collins, Colo.	J. Gaskill	0.1	---
5,000		Belle Glade, Fla.	T. E. Summers	0.3	0.3
34,900		Orlando, Fla.	(J. H. O'Bannon - (G. R. Grimm	1.0	1.5
14,700		Albany, Ga.	J. R. Cole	1.0	---
1,000		Experiment, Ga.	B. S. Hawkins	0.1	0.1
12,900		Tifton, Ga.	(H. D. Wells - (B. B. Brodie	0.9	0.6
1,100		Urbana, Ill.	VACANCY	0.1	---
1,800		Ames, Iowa	J. Dunleavy	0.1	---
1,000		Manhattan, Kans.	L. E. Browder		
2,000		Baton Rouge, La.	H. A. Lamey	0.1	0.1

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Chemical sprays for control of pecan bunch disease.
	Fungicides for improved blue mold control in tobacco seedlings. )
	Castorbean seed treatment - damping off control. )
	Develop nematocides, including attractants, repellants, chemosterilants. )
	Sesame seed treatment - bacterial leaf spot control. )-
	Control of apple mildew. )
	Control of peach bacterial spot. )
	Fumigation to control peach root rots. )
	Control of strawberry rots. )
	Control of diseases of ornamental plants. )
	Mechanism of fungicidal action as determined by microwave and radio frequency absorption methods.
	Investigations on the nature of virus diseases of lilies.
	Fungicides to improve stands of sugarbeets.
	Fungicidal control of wheat rusts. )
	Nontoxic oil sprays for sugarbeet leaf spot. )-
	Application methods for fungicides for control of cotton seedling diseases.
	Fungicide control and methods of application - cotton boll rots.
	Chemical control and pathology of boll rots, bacterial blight, leafspot, & Verticillium wilt of cotton.
	Control of mummy berry of cranberries.
	Chemical control of seedling diseases and bacterial blights.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
7,500		Shreveport, La.	G. Ken Knight	0.2	0.2
			(H. Heggstad		
			(		
			(C. Thomas		
			(J. M. Good		
			(		
132,200		Beltsville, Md.	-(C. Thomas	4.2	7.2
			(H. L. Keil		
			(H. L. Keil		
			(H. W. Fogle		
			(J. R. McGrew		
			(S. Emsweller		
63,100(g)		Southwest Res. Inst. San Antonio, Tex.	W. D. McClellan	--	--
27,900(c)		Oregon Agr. Expt. Sta., Corvallis, Oreg.	S. L. Emsweller	--	--
1,700		East Lansing, Mich.	D. Mumford	0.2	0.1
9,100		St. Paul, Minn.	-(J. B. Rowell	0.4	0.3
			(L. Calpouzos		
7,000		State College, Miss.	A. B. Wiles	0.5	---
7,500		Stoneville, Miss.	C. D. Ranney	0.5	---
26,000		Portageville, Mo.	VACANCY	1.0	2.0
5,700		New Brunswick, N. J.	A. W. Stretch	0.5	----
5,000		University Park, N. Mex.	C. F. Chew	0.3	0.3

- 1/ Not budget level--funds allocated to location excludes ARS and  
Division level program and administration support.
- 2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Develop less hazardous fungicides for tobacco disease control.
	Develop less hazardous fungicides for tobacco disease control.
	Control of Dutch elm disease by systemic fungicides.
	Chemical control of bacterial blight, Verticillium and Fusarium wilts of cotton.
	Control by fungicides of foliar diseases on Kentucky bluegrass and other grasses grown for seed. )
	Fungicide sprays for downy mildew of hops. )
	Chemical control of walnut blight. )
	Chemical control of pear scab and apple mildew.
	Chemical control of peach diseases.
	Chemical control of root diseases and nematodes of flue-cured tobacco.
	Chemical control of cyst and other soybean nematodes.
	Fungicidal control of rice blast and seedling diseases.
	Fungicidal control of cereal rusts.
	Chemical control of Verticillium wilt, bacterial blight, and seedling diseases of cotton. )
	Control of nematodes in high plains crops. )
	Evaluation of seed treatments in range reseeding. )
	Seed treatments for safflower rust control. )
	Chemical control of nematodes in sugarbeets, )
	deciduous fruits and forage crops. )
	Chemical control of peanut diseases.
	Systemic fungicides to control Verticillium wilt of potato.
	Fungicidal control of wheat smuts by seed treatment, soil treatment, etc.
	Control of corn seedrots and seedling blights by seed treatment.

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Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
1,800		Oxford, N. C.	C. Main	0.1	---
2,400		Waynesville, N. C.	L. Shaw	0.1	0.1
54,200		Delaware, Ohio	L. Schreiber	2.0	2.0
7,200		Stillwater, Okla.	L. A. Brinkerhoff	0.5	---
20,100		Corvallis, Oreg.	(J. R. Hardison -(C. Horner (P. W. Miller	1.1	---
7,500		Hood River, Oreg.	D. L. Coyier	0.5	0.5
8,400		Clemson, S. C.	D. H. Peterson	0.3	0.2
4,200		Florence, S. C.	T. Graham	0.2	0.2
12,400		Jackson, Tenn.	J. M. Epps	0.7	0.9
2,200		Beaumont, Tex.	J. G. Atkins	0.1	0.1
1,500		College Station, Tex.	C. D. Hobbs	0.1	---
39,100		Lubbock, Tex.	(E. B. Minton -(C. C. Orr	2.0	1.0
7,900		Logan, Utah	(A. T. Bleak -(D. Zimmer (G. D. Griffin	0.6	---
2,700		Holland, Va.	K. H. Garren	0.1	---
10,300		Prosser, Wash.	W. Hoyman	0.7	---
9,200		Pullman, Wash.	L. H. Purdy	0.4	---
5,700		Madison, Wis.	P. E. Hoppe	0.5	---

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and  
Division level program and administration support.  
<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
Improved Conventional Pesticides and Methods of Application: Weeds, Growth Regulators, etc.	<p>The research is designed to provide information for the safer use of these chemicals and for the development of new and improved herbicides, growth regulators, etc., which will be safer, less persistent and less hazardous, yet effective.</p> <p>Evaluation and effects of herbicides.</p> <p>Brush control on rangeland - largely juniper.</p> <p>Weed control in irrigated cotton and other field crops.</p> <p>Brush control on rangelands - largely mesquite and cacti.</p> <p>Aquatic weed control (being closed out).</p> <p>Weed control in rice.</p> <p>Endogenous bioregulatory substances affecting the growth and development of cotton.)</p> <p>Control of aquatic weeds in large irrigation canals.)</p> <p>Weed control in irrigated cotton.)</p> <p>Exogenous growth regulators in fruiting and leaf abscission control in cotton.)</p> <p>Aquatic weed control in irrigation - ditches, lakes, and reservoirs.</p> <p>Weed control in sugarbeets.</p> <p>Aquatic weed control - Southern waterways - alligator weed, water hyacinth, etc.</p> <p>Weed control in peanuts and soybeans (nutsedge).)</p> <p>Weed control in vegetable crops)</p> <p>Develop improved sucker control compounds in tobacco.)</p>

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Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
5,000		Palmer, Alaska	A. H. Dinkel, J. H. Lebesadel, and R. L. Taylor	0.3	---
14,300		Flagstaff, Ariz.	T. N. Johnsen, Jr.	0.7	0.7
17,000		Tempe, Ariz.	H. F. Arle	0.8	0.9
16,600		Tucson, Ariz.	H. M. Hull	1.7	1.0
6,500		Clarkedale, Ark.	Vacancy	0.5	---
4,600		Stuttgart, Ark.	R. J. Smith	0.3	---
14,300		Davis, Calif. -	(O. E. Smith (R. R. Yeo	0.8	0.5
17,200		Shafter, Calif. -	(J. H. Miller (V. T. Walhood	1.0	0.5
40,800		Denver, Colo.	P. A. Frank	2.0	2.0
10,400		Fort Collins, Colo.	E. E. Schweizer	0.4	0.4
500		Fort Lauderdale, Fla.	L. W. Weldon	---	---
37,700		Tifton, Ga.	(E. W. Hauser (R. B. Taylorson (W. Meudt	1.7	0.8

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Weed control on rangeland (downy brome).
	Weed control in soybeans.
	Weed control in pastures.
	Weed control in wheat and grain sorghum.
	Weed control in sugarcane - largely Johnsongrass.
	Weed control in turf and pasture.
	Weed control in vegetables and ornamentals.
	Plant hormones and growth regulators.
	Develop improved sucker control compounds in tobacco.
	Evaluation of new chemicals as herbicides.
	Surfactants in herbicides; herbicidal mixtures; and mechanisms of herbicidal action.
	Growth control and floral bud stimulation of ornamental plants.
	Improved herbicides for Johnsongrass in soybeans.
	Chemical stimulants and inhibitors on seed germination and seedling growth and sensitivity of weedy plants.
	Mechanism and sites of action of selected herbicides.
	Structural changes induced by selected herbicides on particular plant species.
	Effects of selected herbicides on the composition and quality of food crops.
	Effects of selected herbicides on beneficial and parasitic soil organisms.
	Interactions between major classes of herbicides, insecticides, fungicides, and nematocides applied to selected plant species.

May 1965

Fund Assigned 1/ (Project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
6,200		Twin Falls, Idaho	G. J. Klomp	0.4	---
8,900		Urbana, Ill.	L. Wax	0.3	0.5
18,000		Lafayette, Ind.	M. M. Schreiber	0.4	1.0
6,300		Hays, Kans.	W. M. Phillips	0.5	---
26,900		Houma, La.	R. W. Millhollon	0.7	1.5
308,300		Beltsville, Md.	(D. L. Klingman and (H. Kerr (L. L. Danielson (J. W. Mitchell (G. Steffens (W. A. Gentner (J. Holstun ( (N. Stuart	10.5	13.7
46,400(c)		Univ. of Missouri, Columbia, Mo.	J. T. Holstun	--	--
117,200(g)		Univ. of Wis. Madison, Wis.	L. L. Danielson	--	--
90,200(g)		Dartmouth Univ., Hanover, N.H.	J. L. Hilton	--	--
90,100(g)		Univ. of Calif., Berkeley, Calif.	D. L. Klingman	--	--
90,200(c)		Ohio State Univ. Columbus, Ohio	L. L. Danielson	--	--
90,100(c)		Auburn Univ., Auburn, Ala.	T. J. Sheets	--	--
54,100(c)		N.C. Agr. Expt. Sta., Raleigh, N.C.	T. J. Sheets	--	--

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Weed control on sugarbeets and flax.
	Weed control in corn and cotton.)
	Weed control in pastures.)-
	Applied growth regulators affecting growth and development of cotton.)
	Weed control in cotton, corn and soybeans.)
	Weed control in pastures.
	Aquatic and ditchbank weed control in drainage and irrigation ditches.
	Weed control in pastures.
	Control of range weeds.
	Weed control in orchard crops, small fruits, and vegetable crops.
	Control of phreatophytes - largely salt cedar.
	Weed control in pastures to avoid or minimize herbicide residue.
	Develop improved sucker control compounds for) tobacco.)-
	Mechanisms of action of herbicides.)
	Develop improved sucker control compounds for tobacco.
	Control of witchweed in corn and other crops.
	Develop improved sucker control compounds for tobacco.
	Brush and weed control in grazing lands.
	Brush and weed control in grazing lands.
	Weed control in forage seed crops.
	Develop improved sucker control compounds for tobacco.
	Develop improved tobacco sucker control compounds and herbicides.
	Control of brush on rangelands.

May 1965

Fund Assigned <sup>1/</sup> (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
37,100		St. Paul, Minn.	R. Anderson	0.7	0.7
18,400		State College, Miss.	(V. C. Harris (T. Easley	1.5	---
85,600		Stoneville, Miss.	(R. O. Thomas (C. G. McWhorter	3.2	3.0
14,100		Columbia, Mo.	E. J. Peters	0.6	0.6
10,400		Bozeman, Mont.	J. M. Hodgson	0.5	0.5
23,700		Lincoln, Nebr.	M. K. McCarty	0.6	2.0
6,300		Reno, Nev.	R. A. Evans	0.6	0.3
3,400		New Brunswick, N. J.	W. V. Welker	0.3	---
34,900		Los Lunas, N. Mex.	E. E. Hughes	1.6	1.6
7,100		Ithaca, N. Y.	D. L. Linscott	0.3	0.3
31,600		Raleigh, N. C.	(H. Seltman (D. E. Moreland	1.5	1.5
4,800		Waynesville, N. C.	L. Shaw	0.2	0.2
11,300		Whiteville, N. C.	G. H. Egley	0.6	0.6
2,000		Landisville, Pa.	H. Engle	0.1	0.2
13,800		Stillwater, Okla.	H. M. Elwell	0.8	0.8
9,400		Woodward, Okla.	E. H. McIlvain	---	1.0
7,400		Corvallis, Oreg.	W. O. Lee	0.4	0.4
6,100		Florence, S. C.	J. Chaplin	0.1	1.0
3,300		Greenville, Tenn.	B. Nichols	0.3	0.4
18,700		College Station, Tex.	H. M. Morton	1.0	0.5

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Weed control in vegetable crops.
	Weed control on rangelands (poisonous weeds).
	Weed control in sugarbeets, and dodder in alfalfa) seed fields. )
	Control of aquatic weeds in irrigation systems. )
	Weed control on rangelands.
	Growth regulators to control regular bearing in apples and cherries.
	Develop improved tobacco sucker control compounds.
	Aquatic weed control.
	Develop improved tobacco sucker control compounds.
Research on Fate and Effect of Pesticide Residues in Soils	To provide information on the entry, movement, accumu- lation, persistence, mechanisms of action, and fate of pesticides in and on soils as a basis for developing safe pesticides and safe methods for their use in con- trolling insects, diseases, nematodes, and weeds.
	Residual effects of herbicides applied for weed con- trol in cotton.
	Residual effects of herbicides applied for weed control in rice.
	Residual effects in soils of herbicides for weed control in cotton.
	Residual effects of aquatic herbicides applied to irrigation ditches.
	Residual effects in soils of herbicides on weed control in sugarbeets.
	Residual effects of herbicides applied for control of weeds in vegetable crops and peanuts.

May 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
18,200		Weslaco, Tex.	R.M. Menges	0.2	1.2
34,800		Logan, Utah	M.C. Williams	0.9	2.0
24,000		Prosser, Wash.	(J. H. Dawson (V. F. Bruns	1.6	1.6
5,300		Pullman, Wash.	W. C. Robocker	0.7	0.7
70,300		Wenatchee, Wash.	G. C. Martin, L.P. Batjer, and M. W. Williams	1.9	2.0
1,500		Madison, Wis.	W. Ogden	0.1	---
19,700		Laramie, Wyo.	F. L. Timmons	1.0	0.5
2,000		Mayaguez, P.R.	M. Gaskins	0.3	0.5
2,100		Tempe, Ariz.	H. F. Arle	0.1	0.1
1,600		Stuttgart, Ark.	R. J. Smith	0.1	---
1,400		Shafter, Calif.	J. H. Miller	0.1	---
4,400		Denver, Colo.	Peter H. Frank	0.6	0.6
5,200		Fort Collins, Colo.	E. E. Schweizer	0.2	0.2
7,400		Tifton, Ga.	R. B. Taylorson	0.3	0.3

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

ARS - Crops Research Division

Descriptive title of project	Brief description of objectives of project
	Residual effects of benzoic type herbicides applied for weed control in grain sorghum.
	Residual effects of herbicides applied for weed control in sugarcane.
	Effect of wind velocity and volatilization on residual herbicide activity. ) Behavior and fate of pesticides in soils. )-
	Residual effects of herbicides applied for weed control in sugarbeets and flax.
	Residues of herbicides applied for weeds in cotton and soybeans.
	Residues of herbicides applied to orchard crops and vegetables.
	Residual effects of herbicides applied for weed control in forage seed crops.
	Effects of climate, soil composition, irrigation methods, and cultural practices on performance and persistence of herbicides in soil.
	Residual effects of herbicides applied for weed control in sugarbeets and alfalfa.

May 1965

Fund Assigned1/ (Project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural2/			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
3,800		Hays, Kans.	W. M. Phillips	0.3	---
1,700		Houma, La.	R. W. Millhollon	0.1	0.2
236,700		Beltsville, Md.	(W. A. Gentner -(T. J. Sheets	7.3	13.0
5,300		St. Paul, Minn.	R. N. Anderson	0.1	0.1
4,400		Stoneville, Miss.	C. G. McWhorter	1.0	0.2
2,300		New Brunswick, N. J.	W. V. Welker	0.2	---
1,800		Corvallis, Oreg.	W. O. Lee	0.1	---
6,500		Weslaco, Tex.	R. M. Menges	0.3	0.5
1,000		Prosser, Wash.	J. H. Dawson	0.1	0.1

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
<p><u>Biological Controls:</u>  <u>Research on Control of Pests</u>  by Biological, Sterility and  Non-chemical Methods, or by  Use of Attractants, Etc.</p>	<p>To develop means to control insect pests that will avoid or minimize the need for extensive use of chemical pesticides.</p>
<p>Parasites, Predators, and  Diseases</p>	<p>(1) To study the kinds of disease organisms which affect our most important destructive insects and develop methods for their use in control. (2) To intensify research on the importation, establishment, and mass production and use of insect parasites and predators for insect control. (3) To develop integrated biological and chemical control procedures. (4) To search for and investigate the use of insects for the biological control of introduced weeds.</p>
	<p>Utilization of parasites, predators, and diseases in control of insects attacking alfalfa, sugarbeets, and vegetable crops.</p>
	<p>Studies of parasites, predators, and diseases of cotton insects and mites.</p>
	<p>(Same as Tempe.)</p>
	<p>Research on biological control of weeds.</p>
	<p>Research on diseases and microorganisms affecting mosquitoes.</p>
	<p>Research on parasites, predators, and pathogens for control of insects and mites on citrus, vegetables, and other crops.</p>
	<p>Basic research on the classification and identification of beneficial insects.</p>

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
35,700		Mesa, Ariz.	O. L. Barnes & O. A. Hills	1.0	2.0
500		Tempe, Ariz.	L. W. Sheets	-	-
4,500		Tucson, Ariz.	G. T. Bottger	0.3	0.1
81,400		Albany, Calif.	L. A. Andres	5.0	3.0
3,700		Fresno, Calif.	Vacancy	0.4	-
109,900		Riverside, Calif.	(H. Tashiro, -(D. W. Clancy, & (T. J. Henneberry	4.5	2.0
67,900		District of Columbia	R. H. Foote	3.2	0.6

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Research on parasites and predators of sugarcane insects.
	Determination of parasites, predators, and pathogens attacking mosquitoes, flies, and other insects affecting man and animals and development of methods for utilization of them in control.
	Studies of natural control of citrus insects and mites by parasites, predators, and pathogens and development of programs integrating natural control with minimum pesticide usage. <u>1/</u>
	Research on diseases of insects and mites on citrus.
	Studies on parasites, predators, and diseases of insects attacking corn, soybeans, and peanuts.
	Studies on parasites of the Mediterranean and oriental fruit flies and the melon fly.
	Studies on parasites and predators of the cereal leaf beetle.
	Research on the parasites, predators, and diseases of the codling moth, red-banded leaf roller, and mites in apple orchards and integration of biological and chemical control procedures.
	Studies of parasites, predators, and diseases of the European corn borer and development of utilization in control.

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1/ Studies at Lake Alfred transferred to and consolidated with Orlando, Fla.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
10,000		Canal Point, Fla.	J. R. Gifford	0.5	0.5
95,700		Gainesville, Fla.	C. N. Smith	3.7	6.6
35,000		Lake Alfred, Fla. <sup>3/</sup>	A. G. Selhime	1.0	2.0
24,000		Orlando, Fla.	A. G. Selhime	0.9	1.2
55,900		Tifton, Ga.	H C Cox & E. W. Beck	2.2	3.3
22,300		Honolulu, Hawaii	L. F. Steiner	0.8	1.1
2,100		Lafayette, Ind.	R. L. Gallun	0.1	0.1
46,600		Vincennes, Ind.	M. L. Cleveland	0.8	1.6
53,000		Ankeny, Iowa	T. A. Brindley	2.0	1.2

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Studies at Lake Alfred transferred to and consolidated with Orlando, Fla.

Descriptive title of project	Brief description of objectives of project
	Research on parasites and predators of armyworms and cutworms and natural enemies of rice insects. <u>1/</u>
	Research on parasites, predators, and diseases of insect pests of sugarcane.
	Research on diseases and microorganisms affecting mosquitoes.
	Research on parasites, predators, and diseases of aphids on potatoes.
	Research on insect diseases in the Insect Pathology Pioneering Research Laboratory and on diseases, parasites, and predators of alfalfa weevil and insects and mites of vegetables and ornamental plants.
	Research on parasites of the sugarcane borer.
	Research on a parasite of Rhodesgrass scale.
	Prepare a catalogue of introductions of beneficial insects.
	Study biology of insects associated with rangeland weeds of foreign origin.
	Research on effect of parasites and predators on the breeding potential of mosquitoes of coastal marsh areas.
	Study parasites of Lepidoptera.

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1/ Project not fully implemented and subject to revision.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
15,400		Baton Rouge, La.	R. W. Burrell & T. R. Everett	1.1	0.1
10,600		Houma, La.	R. Mathes	0.6	0.3
17,500		Lake Charles, La.	H. C. Chapman	0.4	1.2
10,400		Orono, Maine	W. A. Shands	0.3	0.3
10,400		Presque Isle, Maine	W. A. Shands	0.3	0.3
254,300		Beltsville, Md.	(A. M. Heimpel, (A. S. Michael, (F. F. Smith, (W. H. Anderson, & (C. C. Blickenstaff	8.5	8.7
29,000 (g)		La. State Univ. Baton Rouge, La.	R. G. Dahms 3/ Beltsville, Md.	--	--
29,500 (c)		Texas A. & M. Univ. College Station, Tex.	R. G. Dahms 3/ Beltsville, Md.	--	--
88,000 (c)		Univ. of Calif. Riverside, Calif.	W. H. Anderson 3/ Beltsville, Md.	--	--
28,500 (c)		Univ. of Idaho Moscow, Idaho	W. H. Anderson 3/ Beltsville, Md.	--	--
33,800 (c)		McNeese State College Lake Charles, La.	W. C. McDuffie 3/ Beltsville, Md.	--	--
28,500 (g)		Wash. State Univ. Pullman, Wash.	W. H. Anderson 3/ Beltsville, Md.	--	--

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Study biology of insects associated with aquatic weeds of foreign origin.
	Study of parasites and pathogens of mosquito larvae.
	Study of toxicology of insect viruses to mammals.
	Research on superior strains of predators and parasites.
	Study of virus diseases of the codling moth and salt marsh caterpillar.
	Study of virus disease of the fall armyworm.
	Study of virus diseases of the cotton leafworm.
	Research on parasites, predators, and microorganisms of <u>Oulema</u> spp.
	Development of methods for mass rearing of potato aphid parasites and predators and evaluation of control with mass releases.
	Survey for native natural enemies affecting the cereal leaf beetle.
	Research on parasites, predators, and diseases of the white-fringed beetle and determination of effectiveness for control.
	Research on diseases and nematodes affecting cotton boll weevil and utilization of them in control.

May 7, 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
28,500 (g)		La. State Univ. Baton Rouge, La.	W. H. Anderson <sup>3/</sup> Beltsville, Md.	--	--
49,000 (g)		Calif. State Dept. of Health Fresno, Calif.	W. C. McDuffie <sup>3/</sup> Beltsville, Md.	--	--
27,500 (c)		Rosner Hixman Lab. Chicago, Ill.	A. M. Heimpel <sup>3/</sup> Beltsville, Md.	--	--
20,500 (g)		Univ. of Missouri Columbia, Mo.	W. H. Anderson <sup>3/</sup> Beltsville, Md.	--	--
86,600 (c)		Ohio State Univ. Columbus, Ohio	A. M. Heimpel <sup>3/</sup> Beltsville, Md.	--	--
44,300 (c)		Univ. of Md. College Park, Md.	A. M. Heimpel <sup>3/</sup> Beltsville, Md.	--	--
44,300 (c)		Rutgers Univ. New Brunswick, N.J.	A. M. Heimpel <sup>3/</sup> Beltsville, Md.	--	--
25,000 (c)		Purdue Univ. Lafayette, Ind.	R. G. Dahms <sup>3/</sup> Beltsville, Md.	--	--
67,800 (g)		Univ. of Maine Orono, Maine	L. B. Reed <sup>3/</sup> Beltsville, Md.	--	--
3,100		East Lansing, Mich.	R. V. Connin	0.1	-
40,900		Gulfport, Miss.	J. L. Jarvis	1.4	0.9
109,800		State College, Miss.	T. B. Davich	4.8	5.5

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

<sup>3/</sup> Entomology Research Division contact representative.



Descriptive title of project	Brief description of objectives of project
	Studies of parasites, predators, and diseases of cotton insects and mites.
	Research on parasites, predators, diseases, and other biological control organisms of insects including studies of bioclimatics, genetics, ecology, mass production and utilization in control. Studies of parasites, predators, and pathogens of grasshoppers and soybean insects.
	Research on parasites, predators, and pathogens of grasshoppers.
	Research on parasites of face fly.
	Research on parasites, predators, and pathogens of Japanese beetle.
	Research on utilization of parasites and diseases for control of tobacco hornworm and budworm.
	Research on parasites and predators of the insect pests of small grains. <u>1/</u>
	Research on parasites, predators, and pathogens of mosquitoes, flies, and other insects affecting man and animals.
	Research on parasites and predators of alfalfa and pasture insects.
	Research on parasites, predators, and pathogens of sugarcane insects.
	Research on parasites, predators, and pathogens attacking vegetable insects.

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1/ Project not fully implemented and subject to revision.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
3,600		Stoneville, Miss.	T. R. Pfrimmer	0.2	0.1
186,200		Columbia, Mo.	D. M. Daugherty & F. R. Lawson	8.4	5.9
26,500		Bozeman, Mont.	F. T. Cowan	1.5	1.0
8,000		Lincoln, Nebr.	G. R. Manglitz	0.3	0.5
141,400		Moorestown, N. J.	M. H. Brunson & D. W. Hamilton	5.9	5.4
7,500		Oxford, N. C.	A. H. Baumhover	0.2	0.4
2,100		Stillwater, Okla.	H. L. Chada	0.1	0.1
44,900		Corvallis, Oreg.	G. W. Eddy	1.7	1.7
1,700		Univ. Park, Pa.	R. C. Newton	0.1	-
1,900		Mayaguez, P. R.	G. W. Miskimen	0.1	0.1
51,000		Charleston, S. C.	W. J. Reid, Jr.	1.6	0.8

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Research on pathogens for control of tobacco insects.
	Study parasites, predators, and diseases of corn rootworms and other insects of corn and small grains.
	Research on parasites, predators, and diseases of bollworms, leafworm, and looper on cotton.
	Research on parasites, predators, and pathogens of cotton insects.
	(Same as College Station.)
	Studies of parasites and predators of brown soft scale on citrus.
	Research on parasites and predators of aphids on vegetables, potatoes, and sugarbeets and their utilization in control.
	Research on predators and pathogens of apple insects and mites.
	Exploration for parasites and predators of insect pests with emphasis on those of cereal leaf beetle, face flies, and grasshoppers.
	Exploration for insect enemies of range weeds.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
3,600		Florence, S. C.	N. Allen	0.2	0.2
67,900		Brookings, S. Dak.	W. L. Howe	1.8	2.4
45,600		Brownsville, Tex.	M. J. Lukefahr	2.0	2.0
3,000		College Station, Tex.	D. A. Lindquist	0.1	0.1
4,800		Waco, Tex.	C. B. Cowan	0.2	0.3
17,600		Weslaco, Tex.	J. W. Balock	0.3	0.9
76,700		Yakima, Wash.	B. J. Landis & B. A. Butt	2.7	2.7
5,400		Kearneysville, W. Va.	E. O. Hamstead	0.5	-
129,000		Paris, France	R. I. Sailer	3.0	7.0
39,700		Rome, Italy	K. E. Frick	2.0	1.0

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Sterility Methods of Insect Control	<p>To develop methods for sterilizing insects through irradiation, chemical sterilization, or genetic manipulation and techniques for utilizing these methods alone or in conjunction with other methods in control of some of our key insect pests and in eradication procedures.</p> <p>Research on sterilization of insect pests of vegetables and citrus by means of irradiation or chemicals.</p> <p>Research on sterilization of flies, mosquitoes, and other insect pests of man and animals by means of irradiation and chemicals.</p> <p>Research on sterilization of citrus mites with chemicals.</p> <p>Sterilization of tobacco insects. <u>1/</u></p> <p>Sterilization of pecan insects.</p> <p>Research on sterilization of plum curculio with chemicals.</p> <p>Research on chemical sterilization of armyworms and other insect pests of corn, small grains, and legumes.</p> <p>Research on sterilization of the Mediterranean and oriental fruit flies and the melon fly by means of irradiation and chemicals.</p> <p>Study sterilization of orchard mites with chemicals.</p> <p>Research on sterilization of European corn borer with radiation and chemicals.</p>

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1/ Project not fully implemented and subject to revision.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				

31,200	Riverside, Calif.	(H. Tashiro - (L. S. Jones, & T. J. Henneberry	1.3	0.4
137,200	Gainesville, Fla.	C. N. Smith	5.3	9.4
6,300	Orlando, Fla.	A. G. Selhime	0.2	0.3
7,300	Quincy, Fla.	C. R. Gentry	0.5	0.5
5,000	Albany, Ga.	M. R. Osburn	0.2	0.1
6,000	Ft. Valley, Ga.	S. W. Jacklin	0.3	0.3
33,200	Tifton, Ga.	H C Cox & E. W. Beck	1.2	1.7
42,800	Honolulu, Hawaii	L. F. Steiner	1.8	2.4
10,500	Vincennes, Ind.	M. L. Cleveland	0.1	0.2
4,700	Ankeny, Iowa	T. A. Brindley	0.1	-

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project

Brief description of  
objectives of project

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Development of chemosterilants for use on insect pests and research on sterilization of insect pests with radiation and chemicals.

Research on use of baits and chemosterilants for control of eye gnats.

Study sterilization procedures for control and eradication of the oriental fruit moth.

Synthesis of organic compounds for use in studies of chemosterilants.

Study of utilization of sterility for control of the cereal leaf beetle.

Research on sterilization of boll weevil with chemicals and radiation.

Research on chemical sterilization of face fly.

Research on chemical sterilization of Japanese beetle.

Research on sterilization of tobacco hornworm, budworm, and other pest with radiation and chemicals.

Research on sterilization of insects by means of radiation, chemicals, and genetic manipulations.

Studies on sterility in sorghum and small grain insects. 1/

Research on sterilization with radiation and chemicals of flies, mosquitoes, and other insects affecting man and livestock.

Research on sterilization of sugarcane borer with chemicals and heat.

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1/ Project not fully implemented and subject to revision.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
492,000		Beltsville, Md.	(S. A. Hall, (F. F. Smith, (W. E. Robbins, & (C. C. Blickenstaff	17.0	17.4
	72,000 (g)	Univ. of Fla. Gainesville	W. C. McDuffie 3/ Beltsville, Md.	--	--
	86,000 (g)	Colo. State Univ. Fort Collins, Colo.	L. D. Christenson 3/ Beltsville, Md.	--	--
	129,900 (c)	Midwest Res. Inst. Kansas City, Mo.	S. A. Hall 3/ Beltsville, Md.	--	--
1,500		East Lansing, Mich.	R. V. Connin	0.1	-
35,000		State College, Miss.	P. A. Hedin	1.0	1.3
4,000		Lincoln, Nebr.	G. R. Manglitz	0.2	0.2
30,400		Moorestown, N. J.	D. W. Hamilton	1.1	0.9
42,400		Oxford, N. C.	A. H. Baumhover	1.3	2.6
430,100		Fargo, N. Dak.	R. C. Bushland	11.0	20.0
2,100		Stillwater, Okla.	H. L. Chada	0.1	0.1
53,700		Corvallis, Oreg.	G. W. Eddy	1.9	1.9
7,600		Mayaguez, P. R.	G. W. Miskimen	0.4	0.4

- 1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.  
 2/ Contract (c) (negotiated only); grant (g).  
 3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Study chemical sterilization of the banded cucumber beetle.
	Research on sterilization with chemicals of corn root worms and other small grain insects.
	Research on sterilization of the pink bollworm with radiation and chemicals.
	Research on sterilization of boll weevil with radiation.
	Research on sterilization of screw-worm flies with radiation and chemicals.
	Sterilization of insects of flowers, bulbs, and ornamental plants.
	Research on sterilization of the codling moth with radiation and chemicals.
	Research on sterilization of the Mexican fruit fly with radiation and chemicals.
Non-chemical Methods of Control	To develop mechanical or cultural methods for control of insect pests.
	Cultural practices affecting control of alfalfa insects.
	Cultural practices to control the pink bollworm.
	Research on the biology and ecology of salt-marsh mosquitoes and their control by water management practices.
	Cultural practices to control the boll weevil.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
5,600		Charleston, S. C.	W. J. Reid, Jr.	0.1	-
45,300		Brookings, S. Dak.	W. L. Howe	1.2	1.5
37,700		Brownsville, Tex.	R. E. Redfern & M. J. Lukefahr	1.7	1.7
1,500		College Station, Tex.	D. A. Lindquist	0.1	0.1
74,700		Mission, Tex.	O. H. Graham	2.9	4.6
2,500		Summer, Wash.	D. L. Coudriet	0.2	0.1
92,700		Yakima, Wash.	B. A. Butt & L. I. Butler	3.5	3.5
59,800		Mexico City; Mexico	M. McPhail	2.2	8.4
4,700		Mesa, Ariz.	O. L. Barnes	0.1	0.2
3,600		Tucson, Ariz.	G. T. Bottger	0.2	0.1
	3,800 (c)	McNeese State College Lake Charles, La.	W. C. McDuffie 3/ Beltsville, Md.		
2,200		Stoneville, Miss.	T. R. Pfrimmer	0.1	0.1

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	<p>Cultural practices to control cotton and tobacco insects.</p> <p>Cultural practices to control the pink bollworm and boll weevil.</p> <p>Cultural practices to control the boll weevil.</p> <p>Cultural practices to control the boll weevil.</p>
Insect Attractants	<p>To investigate all forms of insect attraction including response to chemicals, color, light, and sound. To develop methods of utilizing attractants in surveys for occurrence and eradication and control of insect pests.</p> <p>Studies of light traps and sex lures for pink bollworm and sex attractancy of the salt-marsh caterpillar.</p> <p>Research on sex lures of citrus and vegetable insects and response of certain vegetable insects to lights.</p> <p>Research on attractants, arrestants, feeding, and mating stimuli and other chemotactic agents for flies, mosquitoes, and other insects affecting man and animals.</p> <p>Studies of volatility of fruit fly lures under Florida conditions.</p> <p>Studies of light traps for tobacco insect control.</p> <p>Research on sex attractancy in pecan insects.</p>

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
20,700		Florence, S. C.	N. Allen & H. M. Taft, Jr.	0.8	0.8
20,000		Brownsville, Tex.	M. J. Lukefahr	0.8	0.8
1,500		College Station, Tex.	D. A. Lindquist	0.1	0.1
6,100		Waco, Tex.	C. B. Cowan	0.1	0.1
4,500		Tucson, Ariz.	G. T. Bottger	0.3	0.1
17,700		Riverside, Calif.	H. Tashiro & T. J. Henneberry	0.8	0.2
72,000		Gainesville, Fla.	C. N. Smith	2.8	4.9
6,300		Orlando, Fla.	A. G. Selhime	0.2	0.3
7,300		Quincy, Fla.	C. R. Gentry	0.5	0.5
5,000		Albany, Ga.	M. R. Osburn	0.2	0.1

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Research on attractants for insects of corn and small grains.
	Research on chemical attractants for Mediterranean and oriental fruit flies and melon fly.
	Study of wheat varieties attractancy for Hessian fly. <u>1/</u>
	Research on sex attractancy of the lesser peach tree borer.
	Research on sex attractancy of the European corn borer.
	Studies of attractants for cotton insects. <u>1/</u>
	Determination of the chemical structure and synthesis of demonstrated sex lures of various insects, research on chemical and physical attractants for insect pests of alfalfa, vegetables, and ornamental plants, livestock, and household pests and natural sex attractants.
	Development of mass production methods of peach tree borers (for sex attractant research).
	Study of European corn borer response to infra-red radiation.
	Synthesis of organic compounds for use in insect attractants investigation.
	Development of method for bioassay of tobacco hornworm sex attractant.
	Research on electromagnetic radiation as repellent or attractant for green peach aphid.

1/ Project not implemented and subject to revision.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
33,100		Tifton, Ga.	H C Cox & E. W. Beck	1.2	1.7
60,000		Honolulu, Hawaii	L. F. Steiner	2.4	3.3
2,100		Lafayette, Ind.	R. L. Gallun	0.1	0.1
37,300		Vincennes, Ind.	M. L. Cleveland	0.5	1.0
13,200		Ankeny, Iowa	T. A. Brindley	0.5	0.3
3,200		Baton Rouge, La.	N. W. Earle	0.1	0.2
513,900		Beltsville, Md.	(S. A. Hall, (C. C. Blickenstaff, (F. F. Smith, & (W. E. Robbins	17.0	17.4
73,150 (g)		N. C. State Raleigh, N. C.	L. D. Christenson 3/ Beltsville, Md.	--	--
13,000 (c)		Mich. State Univ. East Lansing, Mich.	R. G. Dahms 3/ Beltsville, Md.	--	--
77,500 (c)		Midwest Res. Inst. Kansas City, Mo.	S. A. Hall 3/ Beltsville, Md.	--	--
28,900 (g)		Univ. of Wisconsin Madison, Wis.	S. A. Hall 3/ Beltsville, Md.	---	--
46,200 (g)		Purdue Univ. Lafayette, Ind.	L. D. Christenson 3/ Beltsville, Md.	--	--

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Research on sex attractancy in the cereal leaf beetle.
	Research on attractants for the white-fringed beetle.
	Research on attractants, arrestants, feeding stimulants, and repellents for the boll weevil.
	Studies with light traps for cotton insects.
	Study of sex attractancy of insect pests of soybeans. <u>1/</u>
	Research on chemical and natural sex attractants, arrestants, and feeding stimulants for the face fly and stable fly.
	Research on attractants for the Japanese beetle.
	Studies of attractants for aphids affecting flowers and ornamental plants.
	Research on chemical and physical attractants for the European chafer.
	Research on physical, chemical and natural sex attractants for the tobacco hornworm, budworm, and other pests of tobacco.
	Studies of attractants for apple maggot, walnut husk maggot, and cherry fruit flies.
	Research on attractants for sorghum and small grain insects. <u>1/</u>
	Research on attractants, arrestants, feeding, and mating stimulants for house flies, mosquitoes, and other insect pests of man and livestock.

1/ Project not implemented and subject to revision.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
1,500		East Lansing, Mich.	R. V. Connin	0.1	-
11,400		Gulfport, Miss.	J. L. Jarvis	0.4	0.3
208,100		State College, Miss.	T. B. Davich & P. A. Hedin	8.3	9.9
7,200		Stoneville, Miss.	T. R. Pfrimmer	0.4	0.2
600		Columbia, Mo.	D. M. Daugherty	-	-
37,200		Lincoln, Nebr.	C. M. Jones	1.7	2.4
30,100		Moorestown, N. J.	D. W. Hamilton	1.1	0.9
1,500		Farmingdale, N. Y.	G. V. Johnson	0.1	-
12,000		Geneva, N. Y.	G. R. Fryer	0.8	0.8
45,400		Oxford, N. C.	A. H. Baumhover	1.4	2.8
4,100		Wooster, Ohio	G. W. Still	0.2	-
2,100		Stillwater, Okla.	H. L. Chada	0.1	0.1
47,000		Corvallis, Oreg.	G. W. Eddy	1.7	1.7

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Research on the sex attractancy of sugarcane stalk borer.
	Research on attractants for the banded cucumber beetle, cabbage looper, and other pests of vegetable crops.
	Research on attractancy of plant extracts, sex, lights, and sound to boll weevil.
	Research on attractants for corn rootworms and other insect pests of corn and small grains.
	Research on the sex attractant of the pink bollworm and develop methods for its use in detection, control, and eradication.
	Studies on use of stimulants to induce feeding by boll weevil on chemically treated foliage.
	Research on attractants for screw-worm and stable flies.
	Studies of attractants for the screw-worm fly.
	Studies of attractants for insects of bulbs, flowers, and ornamental plants.
	Research on natural sex attractant and lights in control of the codling moth.
	Research on chemical attractants for Mexican fruit fly.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
1,900		Mayaguez, P. R.	G. W. Miskimen	0.1	0.1
18,900		Charleston, S. C.	W. J. Reid, Jr.	0.6	0.3
25,300		Florence, S. C.	N. Allen & H. M. Taft, Jr.	1.4	1.4
45,300		Brookings, S. Dak.	W. L. Howe	1.2	1.5
72,400		Brownsville, Tex.	M. J. Lukefahr & R. E. Redfern	3.3	3.3
6,100		College Station, Tex.	D. A. Lindquist	0.3	0.2
9,500		Kerrville, Tex.	H. V. Claborn	0.2	0.4
31,400		Mission, Tex.	O. H. Graham	1.1	1.9
2,500		Sumner, Wash.	D. L. Coudriet	0.2	0.1
42,100		Yakima, Wash.	L. I. Butler & B. A. Butt	1.6	1.3
53,800		Mexico City, Mexico	M. McPhail	2.0	7.6

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
Genetic and Varietal Resistance of Plants to Insects, Diseases, and Nematodes	<p>To select and develop, in cooperation with plant breeders, plant varieties resistant to insect attack.</p> <p>Study resistance of alfalfa varieties to injurious insects.</p> <p>Research on the nature of alfalfa resistance to aphids and resistance of cotton varieties to pink bollworm.</p> <p>Research on resistance of sugarcane to borers.</p> <p>Research on the nature of resistance in corn, sorghum, and oat varieties to insects.</p> <p>Resistance of bean varieties to insect vectors of curly-top.</p> <p>Research on the nature of small grain resistance to the Hessian fly and studies of resistance of small grain varieties to the cereal leaf beetle.</p> <p>Research on host plant resistance to the European corn borer.</p> <p>Research on the nature of wheat resistance to the Hessian fly.</p> <p>Study resistance of rice varieties to insects.</p> <p>Resistance of sugarcane to borers and other insect pests.</p> <p>Research on the nature of plant resistance to insects.</p>

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
35,100		Mesa, Ariz.	O. L. Barnes	1.0	2.0
35,200		Tucson, Ariz.	G. T. Bottger & F. V. Lieberman	1.9	1.3
2,000		Canal Point, Fla.	J. R. Gifford	0.1	0.1
99,500		Tifton, Ga.	H C Cox & E. W. Beck	3.9	5.7
3,100		Twin Falls, Idaho	W. E. Peay	0.1	0.2
80,900		Lafayette, Ind.	R. L. Gallun	2.6	2.6
77,800		Ankeny, Iowa	T. A. Brindley	2.9	1.7
19,200		Manhattan, Kans.	H. W. Somsen	0.9	-
10,200		Baton Rouge, La.	T. R. Everett	0.6	0.6
16,000		Houma, La.	R. Mathes	0.9	0.5
216,600		Beltsville, Md.	(F. F. Smith, - (C. C. Blickenstaff, (S. A. Hall, & (W. E. Robbins	6.8	7.0

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Research on nature of resistance in potatoes to leafhoppers, flea beetles, and aphids.
	Research on the nature of host plant resistance to the European corn borer.
	Research on nature of sweetclover resistance to sweetclover weevil.
	Research on nature of alfalfa resistance to the alfalfa aphid and pea aphid.
	Research on development of small grain varieties resistant to the cereal leaf beetle and determination of the factors responsible for resistance.
	Resistance of cotton lines to boll weevil and of corn to corn earworm.
	Resistance of cotton lines to insect pests.
	Research on resistance of soybean varieties to insects.
	Research on resistance of wheat strains to the wheat stem sawfly.
	Research on the nature of alfalfa and sweetclover to insects.
	Research on the resistance of wheat strains to the wheat stem sawfly.
	Resistance of corn strains to the European corn borer.
	Research on sorghum and small grain resistance to insects.

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Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
	45,000 (g)	Iowa State Univ. Ames, Iowa	L. D. Christenson <u>3/</u> Beltsville, Md.	--	--
	68,700 (g)	Iowa State Univ. Ames, Iowa	R. G. Dahms <u>3/</u> Beltsville, Md.	--	--
	33,000 (g)	Univ. of Nebr. Lincoln, Nebr.	R. G. Dahms <u>3/</u> Beltsville, Md.	--	--
	92,000 (g)	Univ. of Nevada Reno, Nev.	R. G. Dahms <u>3/</u> Beltsville, Md.	--	--
70,400		East Lansing, Mich.	R. V. Connin	1.2	0.5
13,100		State College, Miss.	W. A. Douglas & T. B. Davich	0.9	0.3
1,400		Stoneville, Miss.	T. R. Pfrimmer	0.1	-
500		Columbia, Mo.	D. M. Daugherty	-	-
11,900		Bozeman, Mont.	L. E. Wallace	0.7	-
49,400		Lincoln, Nebr.	G. R. Manglitz	2.3	3.1
19,900		Fargo, N. Dak.	J. M. McWilliams	1.2	-
9,400		Wooster, Ohio	B. D. Barry	0.8	-
51,900		Stillwater, Okla.	H. L. Chada	2.2	2.2

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Resistance of alfalfa varieties to the potato leafhopper.
	Research on development of varieties of vegetables that are resistant to insects.
	Research on the nature of corn resistance to corn rootworm.
	Research on strains of cotton resistant to insects.
	Resistance of cotton varieties to insect pests.
	Research on resistance of potatoes to insects.
Basic Research on the Biology, Taxonomy, Ecology, Physiology, Pathology, Metabolism, and Nutrition of Insects	To develop basic information necessary to the understanding of insects, their relationships to each other and the environment, their life cycles, habits, behavior, and physiological activity, role in transmission of plant and animal diseases as requirements essential to development of control procedures.
	Biology and ecology of grasshoppers and insect pests of vegetables, sugarbeets, and alfalfa and insect transmission of plant diseases.
	Biology and ecology of insect and mite pests of cotton.
	Biology, ecology, and behavior of insects of cotton, alfalfa, clover, and insect pollinators of agricultural crops.
	Biology, ecology, and behavior of citrus and vegetable insects, nutritional studies and insect transmission of fruit tree viruses.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
7,000		Univ. Park, Pa.	R. C. Newton	0.4	-
75,100		Charleston, S. C.	W. J. Reid, Jr.	2.3	1.1
134,100		Brookings, S. Dak.	W. L. Howe	3.7	4.9
22,800		Brownsville, Tex.	M. J. Lukefahr	1.0	1.0
3,800		Waco, Tex.	C. B. Cowan	0.1	0.2
3,800		Yakima, Wash.	B. J. Landis	0.2	0.2
63,300		Mesa, Ariz.	O. L. Barnes & O. A. Hills	1.8	3.6
700		Tempe, Ariz.	L. W. Sheets	-	0.1
50,600		Tucson, Ariz.	(G. T. Bottger, - {S. Taber, & (F. V. Lieberman	2.9	1.8
90,000		Riverside, Calif.	(L. S. Jones, - {H. Tashiro, & (T. J. Henneberry	3.9	1.0

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Biology, ecology and habits of insects affecting man and animals, especially mosquitoes.
	Insect transmission of animal diseases.
	Classification and identification of insects.
	Biology and ecology of the sugarcane borer.
	Biology, ecology, behavior, and nutrition of insects affecting man, household, and industrial establishments.
	Biology and ecology of citrus insects and mites and insect transmission of plant diseases.
	Biology, ecology, and habits of pecan insects.
	Biology, ecology, and habits of peach insects and insect transmission of plant diseases.
	Biology, ecology and behavior of insects of legumes, grass, corn, and grain.
	Biology, ecology, behavior, and nutrition of fruit flies.
	Biology and ecology of insects of vegetables and sugarbeets and insect transmission of plant viruses.
	Biology and ecology of the Hessian fly.
	Biology, ecology, behavior and nutrition of codling moth, leaf roller, orchard mites, and lesser peach tree borer.
	Biology, ecology, behavior, and nutrition of the European corn borer.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
5,600		Fresno, Calif.	Vacancy	0.6	-
25,500		Denver, Colo.	R. H. Jones	1.0	1.0
386,500		Dist. of Columbia	R. H. Foote	17.8	3.4
6,000		Canal Point, Fla.	J. R. Gifford	0.3	0.3
50,900		Gainesville, Fla.	C. N. Smith	2.0	3.7
29,200		Orlando, Fla.	A. G. Selhime	1.2	1.5
20,500		Albany, Ga.	M. R. Osburn	1.0	0.5
18,700		Ft. Valley, Ga.	S. W. Jacklin	0.8	0.8
90,100		Tifton, Ga.	H C Cox & E. W. Beck	3.6	5.3
74,200		Honolulu, Hawaii	L. F. Steiner	3.0	4.1
11,200		Twin Falls, Idaho	W. E. Peay	0.2	0.7
4,200		Lafayette, Ind.	R. L. Gallun	0.2	0.2
17,500		Vincennes, Ind.	M. L. Cleveland	0.2	0.4
23,600		Ankeny, Iowa	T. A. Brindley	0.9	0.5

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Biology and ecology of the Hessian fly and wheat jointworm, insect vectors of plant viruses.
	Biology of cotton and rice insects, insect vectors of plant viruses, genetics of bees.
	Biology and ecology of sugarcane insects and insect transmission of sugarcane diseases.
	Biology and ecology of salt-marsh and rice-field mosquitoes.
	Biology and ecology of potato aphids. (Same as Orono.)
	Biology, ecology, behavior and nutrition of insects of alfalfa, vegetables, and ornamental plants and livestock, basic studies of insect physiology, nutrition, metabolism and pathogens, and insect transmission of plant diseases.
	Influence of photoperiod and light on codling moth diapause, behavior, and development.
	Microbiological control of the cereal leaf beetle.
	Isolation, identification, and synthesis of tobacco hornworm sex attractant.
	Environmental conditions affecting the cereal leaf beetle.
	Microbiological deterioration of insecticides and herbicides.
	The behavior of overwintering boll weevils.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
3,400		Manhattan, Kans.	H. W. Somsen	0.1	-
119,600		Baton Rouge, La.	(N. W. Earle, - (W. C. Roberts, & (T. R. Everett	4.8	6.7
15,900		Houma, La.	R. Mathes	0.9	0.5
69,800		Lake Charles, La.	H. C. Chapman	1.6	4.8
5,000		Orono, Maine	W. A. Shands	0.1	0.1
5,000		Presque Isle, Maine	W. A. Shands	0.1	0.1
505,608		Beltsville, Md.	(S.A.Hall, A.Heimpel, (W.E.Robbins, A.S.Michael, (F.F.Smith, - (W.H.Anderson, 17.0 (C.C.Blickenstaff, (R.A.Killough, & (D.W.Anthony 17.4		
32,000 (g)	Wash. State Univ. Pullman, Wash.	L. D. Christenson 3/	--	--	
34,000 (g)	Ohio State Univ. Columbus, Ohio	R. G. Dahms 3/	--	--	
50,700 (g)	Univ. of Mich. Ann Arbor, Mich.	S. A. Hall 3/	--	--	
34,000 (g)	Purdue Univ. Lafayette, Ind.	R. G. Dahms 3/	--	--	
23,000 (c)	Melpar, Inc. Falls Church, Va.	E. E. Fleck 3/	--	--	
23,000 (c)	Texas A. & M. Univ. College Station, Tex.	S. E. Jones 3/	--	--	

- 1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.  
2/ Contract (c) (negotiated only); grant (g).  
3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Biology, ecology, and behavior of the cereal leaf beetle.
	Biology, ecology, and behavior of the white-fringed beetle.
	Biology, ecology, physiology, nutrition, and metabolism of the boll weevil, determination of chemical and physiological factors in cotton related to attractancy, repellency, susceptibility and resistance to the boll weevil.
	Biology and ecology of insects affecting cotton and livestock.
	Biology and ecology of insects affecting forage and seed crops.
	Biology, ecology, and behavior of grasshoppers and wheat stem sawfly.
	Biology, ecology, and behavior of insects affecting alfalfa, sweetclover, and livestock.
	Biology, ecology, behavior, and nutrition of Japanese beetle and beneficial insects.
	Biology, ecology, and behavior of insects and mites of greenhouse and ornamental plants.
	Biology, ecology, and behavior of the European chafer.
	Biology, ecology, behavior, and nutrition of the tobacco hornworm and budworm.
	Research on insect taxonomy.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
48,800		East Lansing, Mich.	R. V. Connin	1.5	0.5
5,300		Gulfport, Miss.	J. L. Jarvis	0.2	0.1
237,000		State College, Miss.	W. A. Douglas & T. B. Davich	11.1	11.7
164,500		Stoneville, Miss.	T. R. Pfrimmer & R. H. Roberts	2.1	1.0
8,900		Columbia, Mo.	D. M. Daugherty	0.4	0.3
38,700		Bozeman, Mont.	L. E. Wallace & F. T. Cowan	2.2	1.4
8,000		Lincoln, Nebr.	C. M. Jones & G. R. Manglitz	0.3	0.5
5,600		Moorestown, N. J.	D. W. Hamilton & M. H. Brunson	0.2	0.1
2,900		Farmingdale, N. Y.	G. V. Johnson	0.2	-
3,000		Geneva, N. Y.	G. R. Fryer	0.2	0.2
35,100		Oxford, N. C.	A. H. Baumhover	1.0	2.0
3,500		Raleigh, N. C.	W. H. Anderson	-	-

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Biology and ecology of the wheat stem sawfly. Basic research on insect physiology, genetics, and nutrition and insect metabolism of insecticides.
	Biology, ecology, and behavior of European corn borer and insects and mites affecting grapes.
	Biology and ecology of insects and mites affecting small grains..
	Biology, ecology, behavior, and nutrition of flies, mosquitoes, and other insect pests of man and animals.
	Biology and ecology of clover insects.
	Biology and ecology of forage insects, and insect transmission of plant diseases.
	Biology, ecology, and behavior of insect pests of sugarcane.
	Biology, ecology, behavior, and nutrition of insects affecting vegetables.
	Biology, ecology, and behavior of insect pests of tobacco and cotton, electrophysiological responses of boll weevil and other cotton insects.
	Biology, ecology, and behavior of insects affecting corn and other grains.
	Biology, ecology, behavior, physiology, morphology, and nutrition of the pink bollworm and other cotton insects and insect bioclimatic research.
	Biology, ecology, behavior, and nutrition of insect and mite pests of cotton.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
443,400		Fargo, N. Dak.	J. M. McWilliam & R. C. Bushland	11.8	20.0
6,300		Wooster, Ohio	B. D. Barry & G. W. Still	0.4	-
6,500		Stillwater, Okla.	H. L. Chada	0.2	0.2
92,400		Corvallis, Oreg.	G. W. Eddy	5.1	3.1
17,500		Forest Grove, Oreg.	H. W. Prescott	1.0	1.0
8,600		University Park, Pa.	R. C. Newton	0.5	-
7,500		Mayaguez, P. R.	G. W. Miskimen	0.4	0.4
10,500		Charleston, S. C.	W. J. Reid, Jr.	0.3	0.2
78,500		Florence, S. C.	N. Allen & H. M. Taft, Jr.	3.1	3.1
113,100		Brookings, S. Dak.	W. L. Howe	3.3	4.3
175,800		Brownsville, Tex.	N. E. Flitters & M. J. Lukefahr	6.1	11.1
73,000		College Station, Tex.	D. A. Lindquist	3.4	2.9

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Biology, ecology, behavior, physiology, and nutrition of the screw-worm.
	Biology and ecology of insects and mites affecting cotton.
	Research on insect taxonomy.
	Research on insect taxonomy.
	Research on insect taxonomy.
	Biology, ecology, and behavior of insect pests of flowering bulbs, insect transmission of plant diseases.
	Biology, ecology, and behavior of insects and mites affecting deciduous fruits, potatoes, vegetables, and sugarbeets and insect transmission of plant viruses.
	Biology, ecology, behavior, and nutrition of the Mexican fruit fly.
Improved Conventional Pesticides	To develop more specific, less persistent conventional pesticides and improved pesticide application equipment and methods for control of insects, diseases, nematodes, and weeds.
	Research on less persistent pesticides for control of insects on vegetables and sugarbeets.
	Research on less persistent insecticides for control of insects and mites on cotton.
	Research on less persistent insecticides for control of insects and mites on cotton and toxicity of pesticides to bees and other pollinating insects.

May 7, 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
23,600		Mission, Tex.	O. H. Graham	0.9	1.4
3,500		Waco, Tex.	C. B. Cowan	0.1	0.1
41,000		Logan, Utah	G. E. Bohart	1.8	1.8
3,700		Provo, Utah	W. H. Anderson	-	-
1,800		Radford, Va.	W. H. Anderson	-	-
7,700		Sumner, Wash.	D. L. Coudriet	0.6	0.3
87,700		Yakima, Wash.	(B. J. Landis, - (B. A. Butt, & (L. I. Butler	3.4	3.2
25,100		Mexico City, Mexico	M. McPhail	0.8	3.4
4,500		Mesa, Ariz.	O. L. Barnes & O. A. Hills	0.1	0.2
7,500		Tempe, Ariz.	L. W. Sheets	-	0.9
43,500		Tucson, Ariz.	S. Taber & G. T. Bottger	2.4	1.6

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Research on specific and less persistent insecticides for control of insect and mite pests of citrus, vegetable, and berry insects.
	Research on less persistent insecticides for control of insect pests of sugarcane.
	Research on safer and less persistent insecticides for control of flies, mosquitoes, and other insect pests of man and animals, mode of action and resistance in insects.
	Research on less persistent and environment compatible insecticides for insects and mites on citrus.
	Research on less persistent insecticides for control of pecan insects.
	Research on less persistent insecticides for control of insects and mites on peaches.
	Research on less hazardous and less persistent insecticides for control of insects of corn, peanuts, and forage grasses, development of improved application equipment and determination of persistence of residues in grasses, silage, milk, and meat.
	Research on safer insecticides and methods of use for control and eradication of fruit flies. Studies of fumigants for treatment of commodities infested with fruit flies.
	Research on less persistent insecticides for control of insects of sugarbeets and vegetables.
	Research on less persistent and environment compatible insecticides for control of insects and mites of deciduous fruits.

May 7, 1965

Fund assigned 1/ (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural 2/			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
37,200		Riverside, Calif.	(L. S. Jones, - (H. Tashiro, & (T. J. Henneberry	1.5	0.4
2,000		Canal Point, Fla.	J. R. Gifford	0.1	0.1
237,600		Gainesville, Fla.	F. Acree & C. N. Smith	9.2	16.4
10,800		Orlando, Fla.	A. G. Selhime	0.5	0.7
10,000		Albany, Ga.	M. R. Osburn	0.6	0.3
20,700		Ft. Valley, Ga.	S. W. Jacklin	0.9	0.9
123,800		Tifton, Ga.	H C Cox & E. W. Beck	4.9	7.3
74,200		Honolulu, Hawaii	L. F. Steiner	3.0	4.1
35,800		Twin Falls, Idaho	W. E. Peay	0.7	2.1
31,400		Vincennes, Ind.	M. L. Cleveland	0.4	0.8

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Research on less persistent, safer, and environment compatible insecticides for corn borer control and on pesticide residues.
	Research on less persistent and safer insecticides for control of rice insects.
	Research on less persistent insecticides for control of sugarcane insects.
	Studies of less persistent and safer insecticides for control of pecan insects.
	Studies of less persistent and environment compatible insecticides for control of aphids on potatoes.
	(Same as Orono.)
	Research on safer, less persistent, and environment compatible insecticides for control of alfalfa, vegetables, ornamentals, and greenhouse insect and mite pests, studies of resistance to insecticides and of residues in food and forage crops, meat and milk, development of analytical methods for determining residues and of improved formulations and methods of application.
	Evaluation of safe materials and methods for control of dogfly.
	Mode of action of conventional insecticides.
	Research on less persistent insecticides for control of white-fringed beetle.
	Research on safer, less persistent and environment compatible insecticides for corn insects.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
14,200		Ankeny, Iowa	T. A. Brindley	0.6	0.3
6,600		Baton Rouge, La.	T. R. Everett	0.4	0.4
10,600		Houma, La.	R. Mathes	0.6	0.2
15,300		Shreveport, La.	Vacancy	1.0	-
3,700		Orono, Maine	W. A. Shands	0.1	0.1
3,700		Presque Isle, Maine	W. A. Shands	0.1	0.1
550,000		Beltsville, Md.	(S. A. Hall, (W. E. Robbins, (C. C. Blickenstaff, - (F. F. Smith, & (D. W. Anthony	18.7	19.1
94,800 (c)		Fla. State Bd. of Health, Jacksonville, Fla.	W. C. McDuffie <u>3/</u> Beltsville, Md.	--	--
71,700 (c)		Calif. State Dept. of Health Fresno, Calif.	W. C. McDuffie <u>3/</u> Beltsville, Md.	--	--
29,700		Gulfport, Miss.	J. L. Jarvis	1.0	0.7
13,100		State College, Miss.	W. A. Douglas	0.9	0.3

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

3/ Entomology Research Division contact representative.

Descriptive title of project	Brief description of objectives of project
	Research on less persistent insecticides for control of insects of cotton and livestock.
	Studies of less persistent insecticides for control of insects of forage and seed crops.
	Research on safer, less persistent insecticides and improved formulations for grasshopper control.
	Studies of safer, less persistent insecticides for control of grass insects.
	Research on fumigants for treatment of commodities subject to quarantine due to insect infestations.
	Research on safer, less persistent insecticides for control of Japanese beetle and persistence of residues in soils.
	Research on safer insecticides for control of insects and mites of greenhouse and ornamental plants.
	Research on safer, environment compatible insecticides for control of tobacco hornworm and budworm.
	Studies of safer, less persistent insecticides and methods of application for control of grape insects and fruit flies affecting apples, cherries, and walnuts.
	Studies of safer, less persistent insecticides for control of insects of small grains.
	Research on safer and less persistent insecticides for control of flies, mosquitoes, and other insect pests of man and animals, mode of action and resistance in insects.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
38,800		Stoneville, Miss.	T. R. Pfrimmer & R. H. Roberts	2.1	1.1
27,300		Columbia, Mo.	D. M. Daugherty	1.2	0.8
45,800		Bozeman, Mont.	F. T. Cowan & L. E. Wallace	2.6	1.6
4,100		Lincoln, Nebr.	G. R. Manglitz	0.2	0.3
29,300		Hoboken, N. J.	H. H. Richardson	2.0	1.0
43,300		Moorestown, N. J.	D. W. Hamilton	1.7	1.2
10,200		Farmingdale, N. Y.	G. V. Johnson	0.7	-
4,000		Oxford, N. C.	A. H. Baumhover	0.1	0.2
12,100		Wooster, Ohio	G. W. Still	0.6	-
8,600		Stillwater, Okla.	H. L. Chada	0.3	0.3
98,200		Corvallis, Oreg.	G. W. Eddy	3.6	3.6

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
	Research on improved methods of application of pesticides.
	Research on safer, less persistent and environment compatible insecticides for control of vegetable insects, studies of persistence of insecticide residues.
	Studies of less persistent insecticides for control of wireworms and other insect pests of tobacco and residues from pesticide usage.
	Research on safer, less persistent insecticides for control of insects of corn and other grains.
	Research on safer, less persistent and environment compatible insecticides for control of pink bollworm and other cotton insects and development of resistance to insecticides by the pink bollworm.
	Research on safer, less persistent insecticides for insects and mites on cotton.
	Research on safer insecticides for control of insects and ticks affecting livestock, pesticide residues in meat and milk and in cooperation with Division of Animal Husbandry the toxicity of pesticides to cattle.
	Studies of safer insecticides for control of cotton insects and mites.
	Studies of effect of pesticides on parasites and predators of brown soft scale on citrus.
	Studies of safer insecticides for control of the screw-worm.
	Studies of safer, less persistent insecticides for control of insects on tomatoes and sugarbeets.

May 7, 1965

Fund assigned <sup>1/</sup> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <sup>2/</sup>			Prof. GS-7 & above	Sub- prof.
Dollars	Dollars				
44,100		Forest Grove, Oreg.	C. W. Getzendaner	2.0	2.0
37,200		Charleston, S. C.	W. J. Reid, Jr.	1.1	0.6
36,800		Florence, S. C.	N. Allen	1.5	1.5
67,900		Brookings, S. Dak.	W. L. Howe	1.8	2.4
46,100		Brownsville, Tex.	R. E. Redfern & M. J. Lukefahr	2.1	2.1
66,900		College Station, Tex.	D. A. Lindquist	3.0	2.6
360,700		Kerrville, Tex.	O. H. Graham	11.8	23.6
32,100		Waco, Tex.	C. B. Cowan	1.5	2.3
43,100		Weslaco, Tex.	J. W. Balock	0.7	2.1
1,300		Mission, Tex.	O. H. Graham	0.1	0.1
41,700		Logan, Utah	H. E. Dorst & G. E. Bohart	2.2	3.2

<sup>1/</sup> Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

<sup>2/</sup> Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
	Studies of safer, less persistent insecticides for control of insects and mites of flowers, bulbs, and greenhouse plants.
	Studies of safer insecticides for control of insects and mites of deciduous fruits.
	Research on safer, less persistent and environment compatible insecticides for control of insects and mites of deciduous fruits, potatoes, vegetables, and sugarbeets and pesticide residues in food and forage crops.
	Studies of safer and environment compatible insecticides for control of insects and mites of deciduous fruits.
	Research on safer insecticides and methods of use to control the Mexican fruit fly and fumigants for treatment of infested fruit to meet quarantine requirements.

May 7, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs.on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS-7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
12,800		Sumner, Wash.	D. L. Coudriet	1.0	0.5
21,200		Wenatchee, Wash.	F. H. Harries	1.0	1.0
141,200		Yakima, Wash.	(B. J. Landis, (B. A. Butt, & (L. I. Butler	5.4	5.1
5,300		Kearneysville, W.Va.	E. O. Hamstead	0.5	-
53,800		Mexico City, Mexico	M. McPhail	2.0	7.6

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Effects of fumigation of stored wheat on vitamin content of grain, milling fractions, and home-baked products; and on baking performance of flour for household use.	To determine and relate effects of several types of fumigants used on stored wheat on tocopherols and B-vitamin content of the grain, milling fractions, and unbaked dough and baked products prepared by simulated household procedures; and on eating quality of the baked products assessed by physical and sensory methods.
Nutrient composition of eggs and quality of the meat from hens treated with malathion.	To determine the effects of malathion residues in the tissues of laying hens on the nutrient content of eggs produced by the hens, as indicated by analyses for amino acids, fatty acids, vitamin A, carotenoids, and cholesterol; and on the eating quality of the cooked meat with and without home-type refrigerator or freezer storage in cooked or raw state.
The metabolic response of the rat to diets containing high levels of bromide residues.	To study the metabolic effect of adding foods treated with bromide fumigants to diets adequate or marginal in iodine.
The physiological response of rats to diets which include different kinds of fats with and without added chlorinated hydrocarbon pesticides.	To determine the influence of feeding rats diets containing selected types of heated and unheated fats with and without chlorinated hydrocarbons on growth and reproductive performance through three generations and on survival.
The metabolic effects of pesticide residues in body fat when the content and distribution of body fat of rats fed different diets are altered by dietary restriction.	To study the effect of low levels of chlorinated hydrocarbon pesticides on body chemistry and tissue structure of obese and non-obese rats fed different diets ad libitum and during subsequent dietary restriction.

April 30, 1965

Fund assigned 1/ (project level)		:	:	:	:Man-yrs. on proj.	
Intra-	Extra-	:	Locations of work	:	Prof.	Sub-
mural	mural 2/	:	City and State	:	GS-7 &	prof.
		:		:	above	
Dollars	Dollars					
129,720			Beltsville, Md.	R.H. Matthews H.T. Slover E.M. Hewston	4.6	8.0
8,460	(c)44,800		Maspeth, N. Y. Beltsville, Md.	E.W. Toepfer	.3	--
62,040			Beltsville, Md.	N. Simon	2.2	1.7
5,640	(c)114,685		Beltsville, Md. Chicago, Ill.	M. Adams	.2	--
22,560			Beltsville, Md.	F. Lakshmanan A.M. Pommer	.8	2.1

1/ Not budget level -- funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Quality evaluation of selected foods and food products exposed to agricultural chemicals.	To make flavor or other quality evaluations of foods exposed to specific agricultural chemicals during growth, processing or storage of food crops or food products (in cooperation with Department research agencies responsible for the development, use, and control of these chemicals).
Effect of preparation and cooking on the pesticide residue content of selected vegetables.	To determine the pesticide residue content of selected vegetables prepared for eating by various methods of processing and cooking.
Effects of the application of insecticide chemicals during production on the palatability, composition, and related biochemical properties of strawberries.	To determine the comparative effects of treatment with halogen-containing insecticides applied to the soil and a systemic insecticide applied to the plant, on color, texture, and flavor, and on sugars and organic acids and related biochemical properties of fresh and home frozen strawberries.
Palatability and related compositional changes during home storage of potatoes grown with PCNB fungicide treatment.	To determine the effects of PCNB treatment on changes in palatability and related biochemical properties occurring during home storage of potatoes.

April 30, 1965

Fund assigned 1/ (project level)		:	:	:	Man-yrs. on proj.	
Intra-	Extra-	:	Locations of work	:	Prof.	:
mural	mural 2/	:	City and State	:	GS-7 &	:
Dollars		:	:	:	above	:
Dollars		:	:	:		prof.
45,120			Beltsville, Md.	E.H. Dawson	1.6	1.0
2,820	(c)50,064		Beltsville, Md. Washington, D.C.	E.H. Dawson	.1	--
59,220			Beltsville, Md.	J.P. Sweeney	2.1	1.5
59,220			Beltsville, Md.	J.P. Sweeney R.R. Little	2.1	1.5

1/ Not budget level -- funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



ARS-Market Quality Research Division

Descriptive title of project	: Brief description of objectives of project
Basic Research and Developmental Program on Stored-product Insect Biology, Non-pesticidal Control Methods, Safer and More Specific Conventional Pesticidal Control, Insect-resistant Packaging, and Nontoxic Mothproofing Treatments	The objectives are evident in the title of the project.
Control of Stored-grain Insects in the Midwest	To develop and improve chemical biological, and physical methods that will avoid pesticide residues while protecting stored grains and cereal products against insect damage and contamination.
Control of Insects Attacking Dried Fruits and Tree Nuts	To develop and improve chemical, biological, and physical methods that will avoid pesticide residues while protecting dried fruits and harvested tree nuts against insect damage and contamination.
Control of Insects Attacking Peanuts and Corn in the South	To develop and improve chemical, biological, and physical methods that will avoid pesticide residues while protecting peanuts and southern corn against insect damage and contamination.
Control of Insects Attacking Stored Tobacco	To develop and improve chemical, biological, and physical methods that will avoid pesticide residues while protecting stored tobacco against insect damage and infestation.

April 30, 1965

Fund assigned 1/ (project level)		:	:	:	Man-yrs. on proj.	
Intra-	Extra-	:	Locations of work	Project Leaders	Prof. :	Sub-
mural	mural 2/	:	City and State	:	GS-7 &	prof.
		:	:	:	above :	
<u>Dollars</u>	<u>Dollars</u>					
830,132			Savannah, Ga.	H. Laudani	21	21
166,706			Manhattan, Kans.	G. D. White	8	6
87,004			Fresno, Calif.	H. D. Nelson	3	4
62,053			Tifton, Ga.	L. M. Redlinger	2	3
55,327			Richmond, Va.	D. P. Childs	2	2

1/ Not budget level -- funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Control of Insects Attacking Stored Rice	To develop and improve chemical, biological, and physical methods that will avoid pesticide residues while protecting stored rice against insect damage and contamination.
Control of Insects Attacking Dairy Products	To develop and improve chemical, biological, and physical methods that will avoid pesticide residues while protecting dairy products against insect and mite damage and contamination.
Host Finding and Parasitization Performance by a Hymenopterous Parasite	To study factors influencing the performance of a hymenopterous parasite of a stored-grain insect as background for potential development of a biological control that would leave no pesticide residues.
Sex Attractant in Lepidopterous Pests of Stored Products	To learn about pheromone production and the chemical nature of the pheromone in the Indian-meal moth, thus providing basic information to use in developing biological control measures that would leave no pesticide residues.
Effects of Sound on the Behavior and Physiology of the Indian-meal Moth	To find the effects of sound waves on the physiology and behavior of the Indian-meal moth, thus providing basic information to use in developing physical control measures that would leave no pesticide residues.
Reproductive Potential and Related Physiological Effects Following Sublethal Irradiation of Mites	To determine the effects of sublethal gamma irradiation on a stored-product mite species, thus providing basic information to use in developing physical control measures that would leave no pesticide residues.

April 30, 1965

Fund assigned <u>1/</u> (project level)		Locations of work		Project Leaders		Man-yrs. on proj.	
Intra-	Extra-	City and State				Prof.	Sub-
mural	mural <u>2/</u>					GS-7 &	prof.
<u>Dollars</u>		<u>Dollars</u>				above	
27,000		Fresno, Calif.		R. R. Cogburn		1	1
28,000		Fresno, Calif.		W. E. Burkholder		1	1
	4,703 (g)	Albany, Calif.		C. B. Huffaker		0.6	--
	19,500(g)	Athens, Ga.		Ching H. Tsao		0.8	0.5
	17,900(g)	Athens, Ga.		Ching H. Tsao		0.6	0.7
	19,487(g)	Athens, Ga.		Preston E. Hunter		0.8	0.6

1/ Not budget level - funds allocated to location excludes ARS and Division level program and administration support

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Nature and Significance of Population Analysis and Behavior of the Indian-meal Moth in a Closed Environment	To investigate the population dynamics of the Indian-meal moth, thus providing basic information that may reveal new approaches for control measures that would avoid pesticide residues.
Nature and Significance of Activities of Oxidative and Detoxication Enzymes with Age and Stage of Insects	To investigate the physiology of enzyme action on pesticides in stored-product insects, thus providing basic information to facilitate avoiding acquired resistance to pesticides and to use in developing safer, more specific pesticidal control measures.
Extent, Nature, and Significance of Low Temperature Adaptation and Chill-coma in Stored-product Insects	To investigate the physiological effect of low temperatures on stored-product insects, thus providing basic information that may lead to developing environmental control measures that leave no pesticide residues.
Investigations to Design, Construct, and Install an Experimental Fumigation Chamber	To design and provide an experimental fumigation chamber for basic and applied research on fumigants, directed toward developing safe pesticide uses that will minimize residues.
Develop Effective Insect Repellents for Application to Packages for Food and Agricultural Commodities	To develop, synthesize, and provide repellents for stored-product insects, to be used in developing protective measures for food while avoiding pesticide residues.
Isolate, Identify and Synthesize the Sex Attractant of the Female Black Carpet Beetle	To obtain the sex attractant of the female black carpet beetle for use in developing biological control measures that will avoid pesticide residues.

April 30, 1965

Fund assigned 1/ (project level)		:	:	:	:Man-yrs. on proj.	
		:	Locations of work	:	Prof.	Sub-
Intra-	Extra-	:	City and State	:	GS-7 &	prof.
mural	: mural 2/	:		:	above	:
<u>Dollars</u>	<u>Dollars</u>					
	20,000(g)		Clemson, S.C.	Edwin W. King	1	1
	21,000(g)		Ames, Iowa	Paul A. Dahm	0.5	2.1
	19,633(g)		Ames, Iowa	John A. Mutchmo	2.5	0.1
	72,981(c)		Chicago Hts., Ill.	R. Skocypec	0.2	0.2
	49,952(c)		Kansas City, Mo.	Alfred F. Meiners	1.5	---
	24,595(c)		Menlo Park, Calif.	R. M. Silverstein	0.5	0.3

1/ Not budget level - funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



ARS-Market Quality Research Division

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Descriptive title of project	:	Brief description of objectives of project
	:	
	:	

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Development of Methods for Preventing Insecticide Migration into Food Packages	To find packaging components or other physical means for keeping pesticide residues out of packaged food.
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April 30, 1965

Fund assigned 1/	:	:	:	Man-yrs. on proj.
(project level)	:	Locations of work:	:	Prof. ; Sub-
Intra- :	Extra-	:	City and State :	Project Leaders :
mural :	mural 2/ :	:	:	GS-7 & : prof.
Dollars	Dollars	:	:	above :

50,600(c)	Columbus, Ohio	E. R. Mueller	1.2	1.2
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1/ Not budget level - funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Chemical, Physical, and Biological Reactions of Pesticides with Soils	To develop principles on the chemical, physical, and biological reactions of pesticides with soils including variation in soil environment on such reactions.
Effects of Pesticides and Other Chemicals on the Productivity of Soils	To study the possible toxic effects from the accumulation of chlorinated hydrocarbons or other pesticide residues, industrial contaminants, and other foreign chemicals on the capacity of a soil to produce crops.
The Disposition of Pesticides in Soils and Closely Related Water	To determine the effect of pesticides on the quality of water originating from agricultural lands.
The Movement of Pesticides in Water from Drained Land in the Mississippi Delta	To determine the losses of pesticide materials from sugar cane land in the Mississippi Delta.
Interference by Soil Constituents in the Identification and Determination of Pesticide Residues	To conduct basic research on analytical procedures for the determination of organic pesticides in soils.
The Fate and Behavior of Insecticides in Various Soils as Influenced by their Continued Use in Crop Production	To study the fate of pesticides in soils as influenced by soil properties.

April 28, 1965

Fund assigned <u>1/</u> (project level)		Locations of work City and State	Project leaders	Man-yrs. on proj.	
Intra- mural	Extra- mural <u>2/</u>			Prof. GS- 7 & above	Sub- prof.
<u>Dollars</u>	<u>Dollars</u>				
73,500		Fort Collins, Colo.	F. G. Viets, Jr.	1.2	0.4
86,100		Beltsville, Md.	J. D. Menzies H. L. Barrows L. A. Dean	3.6	0.2
34,700		Watkinsville, Ga.	A. P. Barnett A. W. White	1.0	0.3
52,200		Baton Rouge, La.	I. L. Saveson G. H. Willis	0.4	0.2
106,000(c)		Madison, Wis.	Gordon Chesters	-	-
104,779(c)		St. Paul, Minn.	Russell S. Adams, Jr.	-	-

1/ Not budget level--funds allocated to location excludes ARS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

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Descriptive title of project	:	Brief description of objectives of project
	:	
	:	
	:	

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Economics of Pesticide Use in  
Agriculture (FPED)

To inventory periodically the use of pesticides in agriculture and to evaluate the impact of possible changes in their use on the economic efficiency of farm production, farm costs and income and food and fiber supplies.

Economic Appraisal of Damaging  
Pesticide Residues Relative to  
the Use of Water (RDED)

To appraise the types of water quality problems stemming from resource use in agriculture including such problems as pesticide and fertilizer residues, animal wastes and sedimentation.

April 30, 1965

Fund assigned 1/ (project level)		:	:	:	:Man-yrs. on proj.	
Intra-	Extra-	:	Locations of work	:	Prof.	:
mural	mural 2/	:	City and State	:	GS-7 &	:
		:		:	above	:
Dollars	Dollars					

630,000	Washington, D.C.	Karl Gertel	1	0
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20,000	Washington, D.C.	Velmar Davis	3	2
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1/ Not budget level -- funds allocated to location excludes ERS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
Soil Microbiology	Biology and ecology of forest soil microorganisms.
Biology and Control of Root Diseases	Biology of root pathogens and developing effective control.
Biology of California and Hawaii Tree Diseases	Tree diseases of California. Biology, ecology, and control.
Rust Resistant Western White Pine	Controlled breeding for resistance to blister rust.
Diseases of Western White Pine and Antibiotic Control	Physiological action of antibiotics in control.
Diseases of Montane and Subalpine Species	Develop biologically sound controls.
Diseases of SW Ponderosa and Associated Species	Causes of disease and developing biological controls.
Diseases of Northern Conifers and Shelterbelts	Influence of environment on diseases.
Diseases of Aspen	Biology and impact of aspen diseases.
Parasitic Diseases and Heartrots	Occurrence and biology of virus diseases.
Mid-Atlantic Tree Diseases	Etiology and epiphytology of tree diseases.
New England and New York Tree Diseases	Diseases of eastern conifers and northern hardwoods.
Hardwood Diseases	Biology of forest tree disease organisms and their control.

April 28, 1965

Fund assigned <u>1/</u> (project level)		:	:	:	:Man-yrs. on proj.	
		:	Locations of work:	:	Prof.	: Sub-
Intra-	Extra-	:	City and State	:	Project Leaders:	GS-7 & : prof.
mural	mural 2/	:	:	:	: above	:
<u>Thousand dollars</u>	<u>Thousand dollars</u>					
58			Corvallis, Oreg.	Zak	2	0
35			Portland, Oreg.	Childs	1	0
34			Berkeley, Calif.	Bega	3	0
53			Moscow, Idaho	Bingham	3	4
138			Moscow, Idaho	KimmeY	6	1
23			Ft. Collins, Colo.	Hawksworth	2	0
21			Albuquerque, N.Mex.	Lightle	1	0
31			St. Paul, Minn.	Van Arsdell	2	1
16			St. Paul, Minn.	G. Anderson	1	0
106			Delaware, Ohio	Seliskar	4	3
16			Morgantown, W.Va.	Waters	1	1
55			New Haven, Conn.	Houston	2	2
66			Asheville, N.C.	Powers	1	2

1/ Not budget level--funds allocated to location excludes FS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Annosus Root Rot	Physiology, genetics, morphology and pathology of <u>Fomes annosus</u> .
Rust and Nursery Diseases	Biology, ecology and variation of rust diseases.
Soil-Borne Organisms	Biology of mycorrhizae of southern pines.
Wood Decay	Fungus deterioration of wood and its control.
Bottomland Hardwood Diseases	Diseases of trees in bottomlands and associated sites.
Southern Pine Diseases	Development of control through management.
Resistance in Eastern White Pine to Blister Rust	Nature of infection, host response, expression of resistance.

April 28, 1965

Fund assigned 1/ (project level)		:	:	:	Man-yrs. on proj.	
		:	Locations of work:	:	Prof.	Sub.
Intra-	Extra-	:	City and State	:	GS-7 &	prof.
mural	mural 2/	:		:	above	:
Thousand dollars	Thousand dollars					
117			Research Triangle, N.C.	Hodges	5	5
77			Athens, Ga.	Mathews	2	3
91			Athens, Ga.	Campbell	4	2
65			Gulfport, Miss.	Verrall	2	2
51			Stoneville, Miss.	Toole	2	2
81			Gulfport, Miss.	Czabator	5	3
	50(g)		Madison, Wis.	Patton	1	1

1/ Not budget level--funds allocated to location excludes FS and Division level program and administration support.  
 2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Biology and Ecology of Forest Insects SE Alaska	Develop biological control.
Forest Insects, Biology and Ecology - Pacific Northwest	Biological, silvicultural and other controls.
Pathogens of Forest Insects	Control through insect pathogens.
Nutrition, Behavior and Population Dynamics	Determine factors affecting abundance and quality of insect populations.
Biology, Ecology, and Control, Forest Insects California	Insect behavior, host relationships, biological and silvicultural control
Insecticide Research and Screening	Effective and safe control by chemical means.
Population Dynamics of Bark Beetles	Quantification of factors influencing population variation.
Biology and Ecology of Bark Beetles - Northern Rocky Mts.	Silvicultural and biological control of bark beetles.
Biology and Ecology of Defoliators - Northern Rocky Mts.	Improved control of spruce budworm.
Biology and Ecology, Bark beetles and Defoliators - Central Rocky Mts.	Biological and silvicultural control.
Biology and Ecology, Bark Beetles and Defoliators - Southwest	Control of destructive forest insects.
Seed and Cone Insects in Lake States	Reduce seed and cone losses in seed orchards.
Biology and Ecology - Defoliators in Lake States	Silvicultural control of spruce budworm.

April 28, 1965

Fund assigned 1/ (project level)		:	:	:	Man-yrs. on proj
Intra-	Extra-	:	Locations of work	:	Prof. :
mural	mural 2/	:	City and State	:	GS-7 & Sub-
		:		:	above : prof.
Thousand dollars	Thousand dollars				
58			Juneau, Alaska	Schmiege	2 3
97			Corvallis, Oreg.	Wright	5 -
132			Corvallis, Oreg.	Thompson	2 4
107			Corvallis, Oreg.	Carolyn	2 3
131			Berkeley, Calif.	Stevens	6 -
230			Berkeley, Calif.	Moore	8 2
20			Logan, Utah	Parker	1 -
59			Moscow, Idaho	Johnson	3 1
54			Moscow, Idaho	Washburn	2 -
52			Ft. Collins, Colo.	Wygant	3 3
46			Albuquerque, N.Mex.	Massey	2 1
39			St. Paul, Minn.	Miller	2 -
45			St. Paul, Minn.	Batzer	2 1

1/ Not bueget level--funds allocated to location excludes FS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).



Descriptive title of project	Brief description of objectives of project
Coniferous Plantation Insects in Lake States	Reduce damage by plantation insects.
Biology and Ecology - Plantation Insects, Central States	Silvicultural control.
Physiology and Toxicology of Forest and Shade Tree Insects	Systemic, chemical and non-chemical control.
Biological Control and Disease Vectors	Develop biological controls, determine role of vectors.
Biology and Ecology of Forest Insects in Northeast	Obtain fundamental information on genetics, physiology and ecology of forest insects in Northeast.
Microbial and Other Biotic Agents	Biological control of forest insects in Northeast.
Chemical Insecticides	Develop safe and effective controls through chemical and other methods inhibiting reproduction.
Biology and Control of Forest Insects in Southeast	Develop biological and silvicultural controls.
Biology and Control of Hardwood Borers and of Plantation and Nursery Insects, SE	Reduce defects caused by boring insects and improve control of plantation and nursery insects.
Physiology, Nutrition, Genetics	Develop knowledge on physiology and biochemistry, aimed at improving control.
Biology and Ecology of Seed and Cone Insects	Identify damaging insects, determine losses and develop control methods.
Biology and Control of Wood Products Insects	Develop chemical, biological or utilization measures for preventing or controlling damage to wood in use.

April 28, 1965

Fund assigned 1/ (project level)		:	:	:	Man-yrs. on proj.	
		:	Locations of work:	Project	: Prof. :	Sub-
Intra-	Extra-	:	City and State	leaders	: GS-7 & :	prof.
mural	mural	:	:	:	: above :	:
Thousand dollars	Thousand dollars					
45			East Lansing, Mich.	Wilson	2	2
127			Delaware, Ohio	Donley	4	2
96			Delaware, Ohio	Whitten	3	-
94			Delaware, Ohio	Whitten	2	4
143			New Haven, Conn.	Godwin	5	4
82			New Haven, Conn.	Lewis	2	2
57			New Haven, Conn.	Godwin	1	1
79			Athens, Ga.	Speers	3	1
82			Athens, Ga.	Yates	3	4
189			Research Triangle, N.C.	Clark	2	3
37			Olustee, Fla.	Merkel	2	1
206			Gulfport, Miss.	Johnston	5	13

1/ Not budget level--funds allocated to location excludes FS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Biology, Ecology, and Control of Hardwood Insects in the South.	To develop preventive measures for use against insects and improve quality of southern hardwoods.
Biology, Ecology and Control of Pine-infesting Insects in South	Develop safe, effective and economical methods of prevention or control.
Aerial Application of Chemical and Biotic Insecticides	Develop or improve distribution equipment and procedures for aerial application of insecticides.
Remote Sensing - Aerial Techniques	Develop techniques for early detection of incipient outbreaks of insects.
Bark beetle attractants in West	Isolation, identification and synthesis of pheromones of bark beetles.
Role of Attractants - Western Bark Beetles	Role of chemical messengers in the biology of western bark beetles.
Bacterial Diseases of Gypsy Moth	Investigations of the Microflora of healthy and diseased gypsy moth larvae.
Role of Attractants - Southern Bark Beetles	Factors influencing the attraction, movement and concentration of southern pine bark beetles.
Population Dynamics	Population dynamics of the Jack Pine Budworm.
Chemosterilants	Inducing sexual sterility in the European pine shoot moth.
Nutrition and Development of Pine Shoot Moth	Nutritional and developmental requirements of the European pine shoot moth.
Host selection by Elm Bark Beetle	A chemical investigation of the host plant selection by the elm bark beetle.

April 28, 1965

Fund assigned 1/ (project level)		:	Locations of work:	:	Project Leaders:	Man-yrs. on proj.	
Intra-	Extra-	:	City and State	:		Prof. :	Sub.
mural	mural 2/	:		:		GS-7 & :	above : prof.
Thousand dollars	Thousand dollars						
34			Stoneville, Miss.		Morris	2	1
140			Alexandria, La.		Bennett	6	6
34			Beltsville, Md.		Yuill	1	2
83			Beltsville, Md.		Heller	4	3
	100(c)		SRI - Menlo Park, Calif.		Silverstein	--	--
	40(g)		UCAL - Berkeley, Calif.		Wood	--	--
	30(g)		U.Conn. - Storrs, Conn.		Cosenza	--	--
	30(g)		Duke U. - Durham, N.C.		Anderson	--	--
	40(g)		U. Mich. - Ann Arbor, Mich.		Knight	--	--
	35(g)		Wash. State U., Pullman, Wash.		Berryman	--	--
	25(g)		Wash. State U., Pullman, Wash.		Harwood	--	--
	30(g)		OSU - Columbus, Ohio		Daskotch	--	--

1/ Not budget level--funds allocated to location excludes FS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

Descriptive title of project	Brief description of objectives of project
Genetics of Western Conifers FS-PSW-1401	Develop pines resistant to bark beetles, weevils and diseases.
Genetics of Northern Conifers and Hardwoods FS-LS-1401	Develop pines resistant to the pine shoot moth and to weevils.
Genetics of Southern Pines FS-SO-1401	Develop pines resistant to rusts and bark beetles.
Improvement of Northeastern Conifers and Hardwoods FS-NE-1401	Develop weevil resistant eastern white pines.
Grant: Resistance of Pines to Sawflies	Develop resistant strains of pines.
Brush Control FS-PNW-1206	Develop methods to control unwanted woody vegetation.
Animal Damage FS-PNW-1208	Develop methods to control damage to trees by wild animals.
Northern Hardwoods Silviculture FS-LS-1102	Develop methods to control damage to trees by wild animals.

April 28, 1965

Fund assigned 1/ (project level)		:	:	:	:Man-yrs. on proj.	
Intra-	Extra-	:	Locations of work	Project leaders	: Prof.	: Sub-
mural	mural 2/	:	City and State	:	: GS-7 &	: prof.
					: above	:
Thousand dollars	Thousand dollars					
120			Placerville, Calif.	R. Echols	4.0	5.0
97			Rhineland, Wis.	H. Nienstaedt	4.5	4.5
191			Gulfport, Miss.	J. Barber	7.0	13.5
31			Durham, N.H.	-----	1.0	1.0
	100(g)		New Haven, Conn.	R. Callahan and F. Mergen	1.5	1.0
22			Corvallis, Oreg.	-----	1.0	1.0
150			Olympia, Wash.	D. Tackle	5.0	5.0
24			Marquette, Mich.	-----	1.2	1.0

1/ Not budget level--funds allocated to location excludes FS and Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

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Descriptive title of project	:	Brief description of objectives of project
	:	
	:	

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Disposition of Pesticides in Soil and Water of Forest and Related Range Environments (Pesticides--Soil and Water)

To determine how chemical, physical, and microbiological properties of forest soil are affected by, and lead to alteration and degradation of chemical pesticide residues; how such residues are moved over and through the soil; how much and in what forms residues are present in waters of forested or related range-land areas, and to provide information which will serve as a sound basis for devising new or modifying present practices of pesticide use to reduce or eliminate pollution of water by chemical residues.



April 28, 1965

Fund assigned <u>1/</u> (project level)	:	:	:	Man-yrs. on proj.
Intra- : Extra- mural : mural <u>2/</u>	:	Locations of work : City and State :	Project leaders :	Prof. : Sub- GS-7 & : prof. above :
Thousand Dollars				

91	Corvallis, Oreg.	Robert F. Tarrant	5	5
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1/ Not budget level -- funds allocated to location excludes FS and  
Division level program and administration support.

2/ Contract (c) (negotiated only); grant (g).

## STATE AGRICULTURAL EXPERIMENT STATION PROJECTS ON

### PESTICIDES AND PEST CONTROL

Projects are arranged by Stations alphabetically, and on the basis of Federal-grant and non-Federal support. They are grouped as follows:

- |                   |                       |
|-------------------|-----------------------|
| 1. Animal Science | 6. Plant Pathology    |
| 2. Crop Breeding  | 7. Soils              |
| 3. Economics      | 8. Veterinary Science |
| 4. Engineering    | 9. Weeds              |
| 5. Entomology     | 10. Miscellaneous     |

#### Listing by Project Titles

The following list of State Agricultural Experiment Station projects, dealing in part or entirely with pesticides and pest control, provides a survey of the research areas that are being investigated at the SAES. The title of the project does not always show the specific line of research at the station but shows the area of investigation. For example, the SAES projects contributing to a regional project may all be listed under the same title. For these, the regional project outline states the objectives of the work and the specific lines of research being investigated by each station contributing to the regional project. Review and coordination are accomplished by the formation of technical committees composed of project leaders from the SAES and USDA. A meeting of the technical committee is usually held each year. At this meeting, research accomplishments made during the year by each contributing station or USDA laboratory are discussed and plans for the coming year are developed. Regional projects are indicated by letters and numbers in parenthesis after the project title.

## Form 20 - Project Objectives and Abstracts of Procedure

More information than is contained in the title is given in a Form 20 that has been prepared on each project. The objectives and abstract of the procedure of the research of each project are stated on the Form 20. A 5" x 8" card is used for the Form 20 of each project. Copies of Forms 20 for the projects listed on the following pages are on file at the State Agricultural Experiment Stations, in USDA, and in the Science Information Exchange.

### Non-Federal Projects

Information on non-Federal projects at a few State Agricultural Experiment Stations is not available for inclusion in this listing of project titles.

### Professional Man-Years

The estimated professional man-years allotted to research on pesticides and pest control at the State Agricultural Experiment Stations in the 10 general areas covered in this list of projects are as follows:

<u>General Areas of Research</u>	<u>Prof. Man-Years</u>
Animal Science .....	4
Crop Breeding .....	143
Economics .....	20
Engineering .....	9
Entomology .....	532
Plant Pathology .....	446
Soils .....	33
Veterinary Science .....	45
Weeds .....	189
Miscellaneous .....	<u>64</u>
TOTAL	1485

## ALABAMA

### 2. Crop Breeding - Federal-grant

- 140 - Breeding, genetic, and cytological studies with southern peas and snapbeans
- 157 - Genetic studies on the mode of inheritance of high soluble solids content and resistance to Mycosphaerella melonis (Pass.) Chiu and J. C. Walker in musk-melon (Cucumis melo L.)
- 160 - Genetics and breeding of corn
- 184 - Breeding, genetics, and compatibility of plums
- 186 - Development of improved tomato and pepper varieties adapted to the south
- 188 - Genetics and breeding of white, ball, and arrowleaf clovers
- 207 - Genetics and breeding of cotton

### 3. Economics - Federal-grant

- 611 - Role of dealers in informing consumers about characteristics and uses of pesticides

### 4. Engineering - Federal-grant

- 151 - Engineering aspects of the control of weeds in cotton production

### 5. Entomology - Federal-grant

- 129 - Ecology and control of certain Diptera affecting man and animals
- 162 - Biology, ecology, and importance of the Nantucket pine tip moth in Alabama (S-36)
- 172 - Bionomics and control of the major insect pests of cool season leguminous forage crops in Alabama
- 180 - Bionomics and control of corn insects
- 181 - Bionomics and control of cabbage loopers in Alabama
- 182 - Bionomics and control of pecan insects in Alabama
- 183 - Attractants and chemosterilants for insects
- 192 - Chemistry and toxicology of insecticides

## ALABAMA (cont'd)

- 512 - Control of cotton insects
- 613 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

### 6. Plant Pathology - Federal-grant

- 135 - The ecology and parasitism of the major fungal pathogens associated with crown and root-rot diseases of Bermuda grasses
- 137 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)
- 144 - The influence of plant residues and soil microorganisms on the pathogenic and saprophytic behavior of Sclerotium rolfsii (S-26)
- 164 - Origin, dissemination, and infectivity of spores of the cercospora leafspot fungi of peanuts
- 187 - Incidence and control of foliar diseases of pecan
- 595 - The market value of peanuts, other oilseeds, cereals, and their products as affected by biochemical changes caused by fungi during storage

### 8. Veterinary Science - Federal-grant

- 130 - Blood loss and alteration of blood composition by selected internal parasites in sheep and cattle
- 171 - Distribution, pathogenicity, and control of coccidia affecting turkeys in the United States

### 9. Weeds - Federal-grant

- 148 - Development of methods of chemical weed control in row crops, pastures, lawns and other turf
- 150 - Herbicides on submersed aquatic weeds and determination of their values (CRF-1)
- 153 - Evaluation of herbicides for selected horticultural crops
- 427 - Chemical control of weeds in ponds
- 545 - Physiological relationships of prescribed herbicides (S-18)



ALABAMA (cont'd)

10. Miscellaneous - All Other - Federal-grant

158 - Fermentation products produced by fungi growing on peanut  
substrates

194 - Parasites of warmwater fishes and their control

## ALASKA

### 3. Economics - Federal-grant

158m - Pesticide sales and consumption in Alaska

### 5. Entomology - Federal-grant

75 - Emergency insect control measures for Alaska

107 - Factors influencing the distribution and abundance of grasshoppers in Alaska (NC-52)

119 - Life cycle of Hylemyia florialis related to improved control for Alaska

128 - Systemic treatments to control reindeer warbles

### 6. Plant Pathology - Federal-grant

82-M - Pathogenic decomposition of stored Alaskan vegetables

116 - Alaska's potato virus dispersion rates

138 - Potato scab, its circumpolar distribution and variability

### 9. Weeds - Federal-grant

118 - Herbicides for Alaska's horticultural crops

140 - Weed control in Alaska's forage and cereal crops



## ARIZONA

### 1. Animal Science - Federal-grant

- 593 - Physiological methods of residual chlorinated hydrocarbon reduction in the lactating bovine and their effects on lipid metabolism
- 597 - Pesticide deposition in poultry

### 2. Crop Breeding - Federal-grant

- 278 - Breeding cotton for disease and insect resistance, and for plant types suitable for mechanical harvesting
- 297 - Lettuce breeding in Arizona
- 473 - Improvement of alfalfa by breeding for insect and disease resistance

### 4. Engineering - Federal-grant

- 546 - The application of machines to assist in cotton stand establishment (W-24)

### 5. Entomology - Federal-grant

- 322 - Insects and mites affecting alfalfa in Arizona
- 383 - The biology and control of insects affecting cotton in Arizona
- 389 - The biology and food preferences of the khapra beetle as they relate to grain marketability (WM-16)
- 404 - Insect parasites and predators of insect pests of Arizona crops
- 416 - The total fate of some polychloro alicyclic insecticides in plants under controlled conditions (W-45)
- 532 - Factors affecting the abundance and activity of insect parasites of seed chalcids on alfalfa (W-74)
- 564 - Studies on the physiology of grasshoppers and related insects with special reference to polymorphism and morphometric changes in growth and development (W-37)
- 575 - Ecological factors affecting the abundance and cultural control of the pink bollworm in eastern Arizona (S-37)

## ARIZONA (cont'd)

- ES- - The fate of pesticides in animal products during storage and  
784 processing

### 6. Plant Pathology - Federal-grant

- 227 - Isolation and pathogenicity studies relating to disease-inducing agents in alfalfas in Arizona
- 407 - Wood necrosis gummosis (Rio Grande Gummosis) of citrus
- 478 - Interrelationships of mosaics and similar viruses, affecting vegetables and other plants in Arizona
- 519 - The epiphytology and control of downy mildew and other air-borne diseases of lettuce
- 524 - Root diseases of citrus: their cause, effects, and control
- 540 - The role of crop residues in the control of phymatotrichum root rot (W-38)
- 561 - The interrelation of nematodes and other pathogens in plant disease complexes (W-56)
- 572 - Verticillium albo-atrum. Physiology of growth, survival and parasitism

### 7. Soils - Federal-grant

- 591 - Soils, pesticides, and the quality of water (W-82)

### 8. Veterinary - Federal-grant

- 171 - Range livestock losses from poisonous plants
- 422 - Internal parasites in range, pasture, and feedlot cattle

### 9. Weeds - Federal-grant

- 261 - The control of weeds on irrigated lands
- 285 - Control of noxious shrubs on southwestern ranges
- 374 - Control of weeds in lettuce and cantaloupes

### 10. Miscellaneous - All Other - Federal-grant

- 292 - Shrub invasion-forage production inter-relations on Arizona rangelands

## ARKANSAS

### 2. Crop Breeding - Federal-grant

- 359 - Cotton Breeding: The development of breeding stocks having resistance to Verticillium wilt, Fusarium wilt, seedling diseases, nematodes, insect pests, and acceptable agronomic properties
- 429 - Breeding and selecting pickling cucumbers
- 430 - Breeding and selecting southern peas
- 456 - The development and improvement of smooth brome (Bromis Inermis Leyss) for Arkansas
- 490 - Breeding tomatoes adapted to Arkansas conditions with special emphasis on color and firmness
- 491 - Breeding of watermelons with emphasis on small fruited types and on disease resistance
- 493 - Improvement and management of corn

### 2. Crop Breeding - Non-Federal

- 122 - Development of improved cotton varieties
- 393 - Rice breeding and varietal testing
- 513 - Evaluation and management of grasses for turf

### 4. Engineering - Non-Federal

- 602 - Aerial application of sprays
- 608 - Field tests of sprayers for the control of diseases and insects on spinach

### 5. Entomology - Federal-grant

- 261 - Ecological factors favoring abundance: the dispersal: and methods of control of the lone star tick, A. americanum
- 333 - Improvement of biological and insecticidal control of cotton insects (S-43)
- 350 - Ecology of the southwestern and European corn borers in corn and sorghum and their control by means of resistant inbred lines of corn and/or their crosses
- 353 - Biology and control of the Oriental fruit moth

## ARKANSAS (cont'd)

- 432 - Animal parasite control by systemic pesticides
- 433 - Control of biting flies attacking cattle
- 461 - Biological and behavioral factors in relation to population dynamics of boll weevil
- 464 - Reduced spray schedules to control grape insects
- 465 - Biology and control of strawberry crown borer
- 468 - Biology and control of pine tip moth (S-36)
- 522 - Control of tarnished plant bug and other insects causing catfacing of peaches
- 529 - Host plant resistance of cotton to boll weevil
- 530 - Effects of indirect control methods on infestations of stored grain insects
- 542 - Ecology of the grape colaspis, Colaspis flavida Say
- 601 - Insects affecting alfalfa (S-55)
- 611 - The control of pine sawflies in Arkansas with special reference to the use of biological control agents
- 613 - Predation by insects, spiders, and mites on pests of corn and cotton
- 621 - Factors affecting the distribution, abundance, and control of Heliothis spp. in cotton (S-59)

## 5. Entomology - Non-Federal

- 196 - Insect pest survey
- 467 - Biology and control of beetles attacking pine and hardwoods in Arkansas
- 485 - Development of survey methods to measure insect abundance and damage
- 575 - Control of the northern fowl mite in poultry houses
- 594 - Ecology of hemipteroid insects associated with cotton
- 595 - A systematic study of aquatic insect fauna and factors affecting their abundance in White River and its major tributaries



ARKANSAS (cont'd)

- 604 - Life history of certain spiders belonging to the families Lycosidae and Oxyopidae
- 607 - Host finding by the eggplant tortoise beetle Nuzonia pallidula
- 626 - Effect of insects on soybean blooms and pods
- 630 - The insect fauna of Arkansas
- 636 - Control of the housefly, Musca domestica
- 643 - Control of ectoparasites of poultry

6. Plant Pathology - Federal-grant

- 324 - Biology and control of certain important diseases of oats and wheat in Arkansas
- 334 - Cotton pathology: etiology and control of Verticillium wilt of cotton in Arkansas
- 380 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)
- 394 - Etiology and control of certain soil-borne diseases of cotton
- 407 - The use of fungicides in controlling diseases of horticultural crops
- 422 - Etiology and control of seedling blights and boll rots of cotton
- 445 - Studies on importance, etiology and control of plant virus diseases
- 455 - Control of rice diseases
- 537 - The etiology and control of diseases of soybeans
- 540 - The control of diseases of forage crops
- 564 - The physiology of parasitism of fungi causing wilts of woody plants
- 593 - The influence of plant root exudates on the stimulation, inhibition and antagonism of soil rhizosphere microorganisms with special emphasis on soil-borne pathogens of cotton (S-26)

## ARKANSAS (cont'd)

### 6. Plant Pathology - Non-Federal

- 235 - Prevention and control of rose diseases
- 288 - Etiology and control of strawberry diseases
- 290 - Prevention and control of vegetable diseases
- 427 - Etiology and control of peach diseases
- 477 - Corn and grain sorghum diseases and their control
- 487 - Survey and control of forest tree and pine seedling diseases

### 7. Soils - Federal-grant

- 633 - The disposition of pesticides in the soil (S-62)

### 8. Veterinary Science - Federal-grant

- 378 - The biology of nematodes infecting ruminant animals in Arkansas, and the influence of nutritional and genetic factors on parasitic disease
- 425 - Coccidiosis in domestic fowl
- 474 - The effect of internal parasites, nutrition, and their inter-relationship in swine

### 9. Weeds - Federal-grant

- 404 - Herbicidal brush and weed control for range development and pasture improvement
- 550 - Physiological aspects of growth inhibition induced in plants by selected herbicides (S-18)
- 599 - Investigations of the mechanisms of herbicidal selectivity
- 605 - Weed control studies in horticultural crops in Arkansas

### 9. Weeds - Non-Federal

- 419 - Weed control in rice production
- 534 - Weed control studies on agronomic crops in Arkansas



ARKANSAS (cont'd)

10. Miscellaneous - All Other - Federal-grant

- 634 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products  
(SM-32)

1. Animal Science - Federal-grant

MH-2288 - Physiological consequences of long-term exposure to low  
(D) levels of toxicants

2. Crop Breeding - Federal-grant

972 - Alfalfa improvement including breeding, production and  
(D) management practices

1942 - I. Studies in breeding oats and wheat for resistance to  
(D) barley yellow dwarf. II. Development of disease resistant varieties

2184 - Resprouting of Chaparral  
(R)

2. Crop Breeding - Non-Federal

709-A - Asparagus investigations  
(D)

890 - Tomato genetics and its application to breeding for  
(R) resistance to disease and improved quality of fruit under the conditions of southern California

906-A - Vegetable breeding--tomato  
(D)

906-B - Vegetable breeding--carrot, celery, and lettuce--improvement  
(D) in quality and yield, development of disease and insect resistance, and inheritance of characters

906-C - Vegetable breeding - onions and potatoes - development of  
(D) insect and disease resistance, high quality and yield, and a study of the inheritance of characters

906-D - Breeding, taxonomy, and genetics of peppers (Capsicum spp.)  
(D)

906-E - Vegetable breeding - cucurbits - development of insect and  
(D-R) disease resistance, high quality and yield, inheritance of characters

906-F - Vegetable breeding - miscellaneous vegetables - development  
(D) of high quality, high-yielding, and insect and disease resistant varieties of various vegetables not included in other parts of project 906

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\*Berkeley, Davis, Los Angeles, Riverside are indicated as follows:

(B) (D) (LA) (R)

CALIFORNIA (cont'd)

909 - Grape rootstocks  
(D)

1131 - Avocado breeding  
(R)

1175-D - Physiology and quality of vegetable crops--reactions of  
(D-R) vegetable crops to applied chemicals, exclusive of nutrients

1380 - Inheritance of chemical and physical characters in maize, and  
(R) their relation to improvement of sweetcorn

1385 - Cultural problems of the walnut  
(D)

1387 - Breeding, cytology and genetics of small fruits  
(D)

1388 - Cultural problems of the fig  
(D)

1434 - Orchard trial of avocado varieties  
(R)

1537 - Rootstocks for peaches, nectarines, plums, prunes, apricots  
(D) and almonds

1737 - Grape planting stock investigations  
(D)

1877 - The nature and inheritance of Fusarium root rot resistance in  
(D) beans (W-83)

2310 - Pear genetics  
(D)

4. Engineering - Federal-grant

1971 - A study of control and application principles and the design  
(D) requirements of equipment for weed control

4. Engineering - Non-Federal

1046 - A study of the basic requirements and design principles of  
(D) mechanical equipment for pest control

1423 - Use of aircraft in agriculture  
(D)

5. Entomology - Federal-grant

- 657 - Insect vectors and their relation to virus diseases of  
(B) strawberries
- 1229 - Laboratory and field studies of petroleum oils for insecticide  
(R) use
- 1333 - The nature and properties of insect viruses  
(B)
- 1370 - Insect transmission of viruses causing diseases of fruit trees  
(R)
- 1484 - The nature of infectious processes in insects  
(B)
- 1493 - Biological control of red, yellow, purple, and other diaspine  
(R) scales on citrus, avocado, walnut and ornamentals
- 1720 - Population dynamics of rangeland grasshoppers (W-37)  
(B)
- 1735 - The ecology, biology and control of insects and mites affecting  
(D) the seed production of alfalfa, clovers, and other small-seeded legumes in California
- 1748 - Evaluation of the effectiveness of native natural enemies of the  
(B) spotted alfalfa aphid and other aphids
- 1750 - Evaluation and ways of implementing biological control of olive  
(B) scale
- 1775 - The systematics and biology of scale insects  
(D)
- 1875 - A study of the relation of moisture content and temperature of  
(R) various grains in storage to the effectiveness of common grain fumigants under forced circulation, as affecting grain marketability (WM-16)
- 1888 - Biology and control of Drosophila melanogaster in northern  
(D) California
- 1914 - Turfgrasses and their management  
(D)
- 1965 - The epizootiology of infectious diseases in insects  
(B)

## CALIFORNIA (cont'd)

- 1968 - Evaluation of ground cover plants for landscape purposes  
(D)
- 1981 - Absorption, metabolism, and degradation of residues of carbamate  
(R) insecticides in food plants (W-45)
- 1983 - Biological control of the navel orangeworm  
(B)
- 2020 - Mechanisms and factors determining aphid transmission of plant  
(B) viruses
- 2021 - Insect vectors and their relation to virus diseases of deciduous  
(B) fruits and ornamentals
- 2066 - Insect vectors and their relation to virus diseases of celery,  
(B) cucurbits, and other vegetable crops
- 2084 - Factors influencing the induction and termination of diapause  
(D) in the alfalfa seed chalcid (W-74)
- 2183 - The chemistry of non-metabolic decomposition products of  
(B) pesticides (W-45)
- 2186 - Integrated control of flies in northern California  
(B)

## 5. Entomology - Non-Federal

- 806 - Biology and control of insects and mites on deciduous fruits in  
(B) California A-apples B-pears C-apricots
- 876 - The taxonomy, biology and distribution of California thrips  
(D) (Thysanoptera: Tubulifera)
- 982 - Studies in insect physiology  
(B)
- 1020 - The biology, and ecology of insects, mites and spiders of  
(D) San Joaquin Valley cotton fields, and control of destructive  
species by biological, chemical and cultural methods
- 1078 - Biology and control of the citrus red mite and other species of  
(R) tetranychid and related mites attacking citrus
- 1084 - Biology and control of the so-called "orangeworms" attacking  
(R) citrus, with particular reference to orange tortrix, Pyroderces,  
and Holcocera



CALIFORNIA (cont'd)

- 1205 - California insect survey  
(B)
- 1213 - Biology and control of the citrus bud mite and citrus rust mite  
(R)
- 1214 - Control of citrus thrips on citrus  
(R)
- 1222 - Ecology and systematics of Cerambycidae in forest, range, agricultural and urban environments  
(B)
- 1223 - Life history, bionomics and systematics of the Hemiptera  
(B)
- 1268 - Biology and control of the armored scale insects on citrus  
(R)
- 1275 - Biology and control of insects affecting vegetable crops in  
A-G northern California  
(D)
- 1310 - The diagnosis of insect diseases  
(B)
- 1314 - The integrated control of insects and mites attacking walnuts in  
(B) northern California
- 1318 - The bionomics, ecology and control of insects and mites associated  
(B) with ornamental plants in northern California
- 1324 - The utilization of insects to control scotch broom, tansy rag-  
(B) wort, gorse, Mediterranean sage, hoary cress (complex), Russian  
knapweed, Klamath weed and Orobanche (parasitic)
- 1325 - Identification and classification of insect parasites and  
(R-B) predators
- 1326 - Laboratory tests on the effects of insecticides upon parasites  
(R) and predators
- 1330 - Integrated control of insects and mites associated with forage  
(B) legumes in northern California
- 1338A - Control of insects and related pests of greenhouse plants and  
(R) field flower crops
- 1338B - Insects affecting ornamental shrubs, shade trees and forests of  
(R) southern California



CALIFORNIA (cont'd)

- 1339      Biology and control of the insect and other pests of certain  
(R)      subtropical fruit plants in southern California other than  
         the avocado
- 1340      - Biology and control of the insects and other pests of the  
(R)      avocado
- 1355      - Insects and spider mites affecting tomatoes in northern  
(B)      California
- 1362      - Sawflies attacking trees and agricultural crops in California  
(B)
- 1367      - The taxonomy, biology and distribution of the psyllidae  
(B)      (Homoptera)
- 1411      - Bioclimatic research on parasites and predators of various  
(B)      insect pests
- 1414      - Mechanisms of insecticidal action  
(R)
- 1415      - Biological and chemical evaluation of new insecticides in  
(R)      the laboratory
- 1416      - Biology and control of unarmored scales and mealybugs on  
(R)      citrus
- 1418      - Chemical control of aphids attacking citrus  
(R)
- 1419      - Biology and control of insects and mites attacking walnuts  
(R)      in southern California
- 1422-A    - Fruit fly investigation--a study of the influence of  
(R)      sterilization treatments for the various fruit flies on the  
         physiology, handling and marketability of citrus, avocados  
         and other subtropical fruits
- 1440      - Biology and control of insects and mites on peaches, plums,  
(R)      apricots, almonds, and cherries in southern California
- 1441      - Biology and control of insects and mites on vegetable crops  
(R)      in southern California
- 1442      - Insect transmission of virus diseases of melons, peppers,  
(R)      sugar beets, alfalfa, and other vegetable and field crops  
         in southern California

CALIFORNIA (cont'd)

- 1443 - Biology and control of insects and mites on field and forage  
(R) crops in southern California
- 1444 - Biology and control of the codling moth, the two-spotted mite,  
(R) and other insects and mites on apples and pears in southern California
- 1445 - Biology and control of grape leafhopper and other insects and  
(R) mites on grapes in southern California
- 1485 - Nutritional studies on parasites, predators, and their host  
(B) insects to promote more efficient mass production and field utilization
- 1495 - Biological control of mites on citrus, avocado, walnut and  
(R) ornamentals
- 1496 - Biological control of the citricola, black, and other lecaniine  
(R) scales on citrus, walnut and ornamentals
- 1498 - Insects and mites affecting beans  
(B)
- 1499 - Effect of pesticides on apiculture  
(R)
- 1513 - Insect pests of stored grain, seeds and dried food products in  
(R) southern California
- 1514 - The resistance of insects to insecticides  
(R)
- 1538 - Biology, control and pathogen vector relationships of arthropod  
(B) ectoparasites of warm-blooded vertebrates
- 1542 - Mosquitoes of California  
(D)
- 1547 - Research into the possibilities of controlling insect and  
(R) arachnid pests through the use of disease-producing microorganisms
- 1554 - Biological control of insect pests of cotton in southern Calif-  
(R) ornia
- 1560 - Biology, ecology and methods of control of insects attacking  
(D) potatoes
- 1565 - Biology, and control studies on the primary insects and mites  
(D) affecting the production of vegetable seed and vegetable oil crops in northern California

## CALIFORNIA (cont'd)

- 1576 - Development and utilization of analytical methods for insecti-  
(R) cides and acaricides as residue methods and as composition  
methods
- 1589 - Chemical control of insects attacking poultry and livestock in  
(R) southern California
- 1605 - Biology and control of insects and other invertebrate pests  
(D) affecting rice in California
- 1611 - Effect of pesticides in the soil upon growth, flavor, and yield  
(R) of various crops, and upon soil chemical, physical and biological  
properties
- 1614 - The integrated control of insects and mites attacking berries in  
(B) California
- 1634 - Biological control of Hypera brunneipennis (Boh.) on alfalfa  
(R)
- 1642A - Biology and control of household insects (Section for Roy J.  
(LA) Pence)
- 1642B - Biological control of structural insects  
(LA)
- 1650 - Biological control of pest aphids by imported aphidophagous  
(B) arthropods
- 1702 - The biology of entomophagous arthropods  
(R-B)
- 1741 - Effect of pesticides on the natural balance of mites and insects  
(R) in avocado orchards
- 1760 - Biological control of forest insects  
(B)
- 1777 - The classification, bionomics, ecology and control of insect  
(B) pests of forest regeneration in California
- 1778 - The classification, bionomics, ecology and control of bark  
(B) beetles (family: Scolytidae) infesting California trees
- 1795 - Methods for evaluating insecticides for control of scale  
(D) insects on fruit trees and for increasing deposits from sprays
- 1796 - The biology and systematics of the vespoid and sphecoid wasps  
(D)

CALIFORNIA (cont'd)

- 1797 - Biology and control of insects and mites affecting peaches and  
(D) almonds in northern California
- 1853 - Resistance of crop plants to insect attack in northern California  
(D)
- 1860 - Investigations of the integration of chemical and biological  
(B) control of arthropods attacking field and forage crops
- 1894 - Chemical insect attractants and their application to insect  
(R) control
- 1926 - Virus diseases of lettuce with particular reference to the  
(D) virus-vector and biological relationships of aphids
- 1929 - Biology, ecology, control and behavior of Hippelates eye gnats  
(R)
- 1947 - Investigations on new insecticides and techniques for the  
(R) control of pest and vector mosquitoes
- 1967 - Investigations on the structure, development, and histochemistry  
(B) of the insect nervous system
- 1970 - Comparative morphogenesis in the order Hymenoptera (Insecta)  
(B)
- 1986 - The production and reception of sound by insects, and the  
(R) effects of sound on insect behavior
- 1990 - Biochemistry of insect growth and fertility  
(B)
- 1995 - The integrated control of codling moth Carpocapsa pomonella  
(B) (Linnaeus) on deciduous fruits in California
- 1996 - Aquatic midge investigations in southern California  
(R)
- 2013 - Integrated control of insect and mite pests of grape  
(D-B)
- 2017 - The relation of insects to the pear decline disease  
(B)
- 2019 - The systematics, biology, distribution, and control of Diptera  
(B) of public health and veterinary importance



CALIFORNIA (cont'd)

- 2032 - The biological control of nematocerous Diptera (midges, gnats  
(R) and mosquitoes) of public health importance
- 2033 - Biology and control of insects and mites on dates  
(R)
- 2043 - Cone and seed insects attacking forest trees of California with  
(B) particular reference to the cone beetles (Coleoptera: Scolytidae:  
Conophthorus)
- 2049 - Investigations on the control of arthropod-borne plant virus  
(R) and virus-like diseases
- 2063 - Taxonomic and biological investigations on California Micro-  
(B) lepidoptera
- 2067 - Biological control of vegetable crop pests  
(R)
- 2068 - The biology and control of insects and mites affecting cucurbits  
(D)
- 2072 - Feeding and nutrition of aphids and other plant-sucking insects  
(B)
- 2077 - Taxonomic investigations of the parasitic Chalcidoidea  
(B) (Hymenoptera)
- 2094 - Biology and control of ants  
(R)
- 2098 - Biological control of mite and insect pests of greenhouse,  
(R) nursery and floricultural plants
- 2110 - Physiology of hatching mosquito eggs  
(D)
- 2129 - A revisional study of the bees of the genus Perdita F. Smith  
(R) (Hymenoptera)
- 2131 - Pesticides and wildlife  
(B)
- 2132 - Biological control of insect pests of cotton in the San Joaquin  
(B) Valley
- 2140 - Genetics of the flour beetle  
(B)

CALIFORNIA (cont'd)

- 2153 - The resistance of insects to infectious diseases  
(B)
- 2157 - Basic studies on the virus disease outbreaks in insect populations  
(B)
- 2165 - The biochemical effects of radiomimetic compounds and anti-  
(D) metabolites in lower organisms
- 2170 - The biological control of brachycerous Diptera and other soil  
(R) and filth breeding arthropods of medical importance
- 2177 - The influence of ants on vegetation  
(B)
- 2188 - Biology, ecology and systematics of Diptera, with particular  
(R) reference to species of the southwestern United States
- 2197 - Biological control of Hypera postica (Gyllenhal) and related  
weevils on forage legumes
- 2200 - Toxicology of chemicals in food  
(D)
- 2201 - The effect of air pollutants and their residues on entomophagous  
(R) insects
- 2206 - The ecology of anopheline mosquitoes in northern California  
(D)
- 2212 - The study and utilization of microbial pathogens in the control  
(B) of injurious insects and mites
- 2222 - Biological activity of insecticidal derivatives  
(B)
- 2224 - Analytical chemistry of pesticides  
(D)
- 2227 - Integrated control of the oriental fruit moth and other pests  
(B) of peach
- 2237 - Biology and control of spider mites on grapes  
(D)
- 2245 - Environmental and nutritional studies on virus vectors  
(B)



## CALIFORNIA (cont'd)

- 2247 - Factors responsible for the upset of spider-mite and aphid  
(R) populations by pesticides
- 2269 - Basic studies on the dynamics of arthropod populations  
(B)
- 2272 - Studies on generic concepts and species criteria in the family  
(R) Phytoseiidae (Acarina: Mesostigmata)

### 6. Plant Pathology - Federal-grant

- 865 - The chemical bases of disease development in plants with special  
(R) emphasis on the role of metabolic products of plants and pathogens
- 1082 - The citrus psorosis diseases  
(R)
- 1124 - Plant pathogenic bacteria, their diseases and control  
(B)
- 1126 - Factors influencing the re-establishment of peach orchards on  
(D) old peach soils
- 1207 - Synthesis and degradation of organic compounds by saprophytic  
(B) bacteria
- 1334 - The nature of viruses in relation to plant disease  
(B)
- 1376 - Tristeza disease of citrus  
(R)
- 1382 - Orange-tree quick decline: rootstock scion relations affecting  
(R) its occurrence and prevention
- 1552 - Biochemical and physiological aspects of disease resistance  
(D) inherited by plants
- 1626 - Development of nematocides and methods of their application to  
(D) pre-planting and living plant sites as influenced by physical and chemical properties of fumigant, nematode species involved, physical structure of soil, and environmental factors as soil type, moisture, compactness and temperature
- 1651 - Study of etiology, ecology, epiphytology and control of cotton  
(D) diseases in California

## CALIFORNIA (cont'd)

- 1652 - Investigation of the nature of the virus diseases of cereal and  
(D) leguminous crops in California with reference to transmission, variability, effect on yield, host range and varietal reaction
- 1656 - The marketing of deciduous tree fruits and berries in both fresh  
(D) and processed outlets as influenced by so-called transit or market disorders, with special emphasis on the physiological effects of control treatments
- 1657 - Influence of crop residues on fusarium root rots, and streptomyces  
(B) scabs (W-38)
- 1714 - The canker complex of stone fruit trees - etiology, enviromental  
(D) relations and control
- 1715 - Soil-borne viruses-mode of infection and survival in the absence  
(D) of the specific host or hosts
- 1718 - Biological control of plant parasitic nematodes  
(R)
- 1746 - Investigation of the virus disease complex of cucurbits  
(D)
- 1814 - Nematode transmission of plant viruses (W-56)  
(D)
- 1881 - Identification, etiology and control of virus diseases of  
(D) deciduous fruit trees (W-64)
- 2185 - Ecology and physiology of the crown gall organism, Agrobacterium  
(B) tumefaciens
- 2223 - Factors in field soil governing infection of cotton by root  
(B) disease fungi

## 6. Plant Pathology - Non-Federal

- 250 - Fungal diseases of citrus roots  
(R)
- 255 - Armillaria root rot studies  
(R)
- 944 - Diseases of avocado and minor subtropical fruits  
(R)
- 944A - Avocado sun-blotch disease  
(R)

CALIFORNIA (cont'd)

- 973 - Diseases of ornamental plants  
(B)
- 974 - Diseases of orchard trees  
(B-D)
- 975 - Diseases of sugar beets  
(D)
- 977 - Plant disease survey  
(B)
- 979 - Diseases of field crops  
(B-D)
- 980 - The nature and control of vegetable crop diseases  
(B-D)
- 981 - Diseases of strawberry and cane fruits  
(B)
- 1002 - Investigations of peach mosaic and other virus diseases of  
(R) stone fruits in California
- 1085 - Diseases of vegetable crops of southern California  
(R)
- 1125 - Studies on diseases of grapevines and grapes, etiology, epide-  
(D) miology and control
- 1375 - Metabolism, general biochemistry and taxonomy of plant-disease  
(D) bacteria
- 1383 - Exocortis, stubborn disease, cachexia, and other citrus viral  
(R) diseases, except psorosis and tristeza
- 1462 - Diseases of bulbous ornamentals  
(LA)
- 1465 - Histopathology, host range, distribution, and control of diseases  
(R) with specific internal structural disorders
- 1575 - Diseases of agronomic crops in southern California  
(R)
- 1617 - Biology and control of nematodes attacking citrus trees  
(R)

CALIFORNIA (cont'd)

- 1618 - Biology and control of nematodes attacking avocado and other  
(R) subtropical plants
- 1645 - Etiology of storage and transportation diseases of fresh fruits  
(D) and vegetables and their depressing influence on market values
- 1649 - Nature of fungitoxicity to phytopathogenic organisms  
(R)
- 1669 - Control measures for the parasitic plant, branched broomrape  
(B) (Orobanche ramosa)
- 1684 - Biochemical relationships of plant parasitic nematodes to host  
(D) plants
- 1745 - Investigation of the virus diseases of lettuce  
(D)
- 1765 - Chemical control of post-harvest fruit and vegetable decays  
(R) occurring in packing houses, transit, storage, and markets
- 1782 - The nature and control of forest tree diseases  
(B)
- 1867 - Taxonomy, cytology, and physiology of the Sporobolomycetaceae  
(D) and related organisms
- 1900 - Biochemical cytology of bacteria  
(D)
- 1920 - Virus diseases of pome fruits  
(D)
- 1998 - Development and use of analytical methods for the detection and  
(R) determination of fungicides, bactericides, and chemotherapeutic agents
- 2006 - Chemistry of nematodes and nematocides  
(R)
- 2022 - The effects of plant viruses on their insect vectors  
(B)
- 2025 - Cinemicrographic studies of microbiological phenomena  
(D)
- 2027 - Nematodes parasitizing fruit and nut crops and their control  
(D)



CALIFORNIA (cont'd)

- 2028 - Pathological studies of pear decline  
(D)
- 2041 - Nematodes parasitic on field crops and their control  
(D-R)
- 2042 - The biology and control of nematodes attacking vegetable crops  
(R)
- 2044 - Investigation and control of nematodes in ornamental and deciduous  
(D) fruit and nut tree nurseries, and plant materials moved in  
commerce
- 2071 - Etiology, biology and control of turfgrass diseases  
(R)
- 2086 - Fate of fungicides in soil and factors affecting their efficiency  
(R) in controlling plant diseases
- 2087 - Diseases of ornamental crops  
(R)
- 2093 - Biology and ecology of plant viruses  
(R)
- 2095 - Products formed by fungi in rot of fruit, fruit juices, and  
(D) raisins
- 2105 - Ecological investigations of stripe rust (Puccinia striiformis)  
(D) of wheat
- 2106 - Fungus-virus vector relationships  
(D)
- 2107 - Studies on the biochemical and possible virus nature of the tumor-  
(D) inducing principle in the crown gall disease of plants
- 2171 - Biochemical bases of morphology in phytopathogenic fungi  
(R)
- 2174 - Seed transmission of plant pathogenic bacteria with emphasis on  
(D) the factors affecting seed contamination and seedling infection
- 2225 - Analytical chemistry of fungicides, bacteriocides, and related  
(D) compounds
- 2233 - Photochemistry of enzymes and viruses  
(B)

## CALIFORNIA (cont'd)

- 2254 - Purification and characterization of plant viruses including a  
(D) study of factors affecting aggregation of rod-shaped forms
- 2273 - Sulfur and selenium metabolism of molds  
(D)
- 2280 - Isolation, purification and characterization of herbaceous and  
(R) ornamental plant viruses

### 7. Soils - Federal-grant

- 2298 - Soils, pesticides and the quality of water (W-82)  
(D)

### 8. Veterinary Science - Federal-grant

- 1636 - Physiological pathology of trichostrongyloid nematode infections  
(D) in ruminants (W-35)

### 8. Veterinary Science - Non-Federal

- 1609 - Parasitic diseases of animals  
(D)
- 2208 - Factors governing the incidence of Thelazia californiensis,  
(B) an eyeworm parasite of livestock and game animals

### 9. Weeds - Federal-grant

- 883 - Physiological and biochemical studies on weed control  
(D)
- 1400 - The chemical, physiological, and morphological responses of  
(D) woody plant to herbicides. A program of woody plant control
- 1430 - The translocation of herbicides in plants. The use of radio-  
(D) active isotopes and other indicators to study absorption and  
distribution of herbicidal chemicals
- 1568 - Weed control associated with cotton production  
(D)
- 1635 - Control of herbaceous range weeds  
(D)
- 1811 - The physiology and herbicidal control of perennial weeds  
(D)



## CALIFORNIA (cont'd)

- 1816 - The biological control of puncture vine, medusa head and weedy  
(B) thistles
- 1896 - Weed control in vegetable crops  
(D)
- 1901 - Weed control in agronomic crops  
(D)
- 1975 - Comparative biochemistry of herbicides  
(D)
- 2002 - Biological control of nut grass, Spanish broom, prickly pear,  
(R) and certain weedy thistles and nettles
- 2005 - Biochemistry and mode of action of herbicides  
(R)
- 2012 - Comparative biology and control of submersed aquatic weeds  
(D) (CRF-1)
- 2054 - Fundamental biochemical and biophysical mechanisms involved in  
(B) herbicidal action (W-52)
- 2239 - Interaction of temperature with other factors on the response  
(D) of Canada thistle to herbicides (W-77)

## 9. Weeds - Non-Federal

- 1475 - Physiological studies on weeds and weed control in southern  
(R) California orchards
- 1884 - Control of range weeds and plant competition by fire, chemicals,  
(D) mechanical devices, grazing, and other means
- 1917 - Life cycle, physiology and control of perennial weeds affecting  
(R) Subtropical fruit crops
- 2007 - Development and application of analytical methods for the deter-  
(R) mination of herbicides and plant growth regulators in sub-  
tropical fruit, fruit products and soil
- 2274 - The effect of herbicides on photochemical reactions in plants and  
(D) bacteria

CALIFORNIA (cont'd)

10. Miscellaneous - All Others - Federal-grant

- 1570 - Brush seedling establishment and growth in relation to soil  
(B) fertility levels
- 2244 - The introduction, multiplication, preservation, and determi-  
(D) nation of potential value of new plants for industrial and  
other purposes

10. Miscellaneous - All Others - Non-Federal

- 1417 - Biology and control of snails  
(R)
- 1915 - Turfgrasses and their management--Sub-project B-The Nutrition  
(D) of Turfgrasses
- 1916 - Turfgrasses and their management--Sub-project C-Turfgrass  
(D) Management Practices
- 2134 - Plant hormone effects and residues in canned fruit  
(D)
- 2190 - Improvement and management of sagebrush ranges  
(D)

2. Crop Breeding - Federal-grant

- 42 - The improvement of canning tomatoes
- 44 - The breeding of insect and disease resistant onions for processing

2. Crop Breeding - Non-Federal

- 45 - Cucurbit breeding
- 46 - Tree fruit variety and cultural studies
- 51 - Improvement of high altitude (7600') vegetable crops
- 150 - Sugar beet production, breeding, disease, and quality investigations
- 177 - Miscellaneous truck crops
- 193 - Field bean improvement

5. Entomology - Federal-grant

- 36 - Biology of insects transmitting viruses to potatoes and their control
- 144 - The integration of biological control into the orchard spray program of western Colorado peach growers
- 234 - Investigation for the control on rangeland grasshoppers (W-37)
- 237 - The effect of plant growth on the dilution of pesticide residues (W-45)

5. Entomology - Non-Federal

- 35 - Detection of insects transmitting potato viruses in Colorado
- 38 - Insect investigations on onions and other truck crops
- 40 - General insect investigations
- 143 - The influence of orchard management practices upon insect and mite populations of pome fruits

COLORADO (cont'd)

188 - Alfalfa insect investigations

189 - Investigations on feed grain insects

6. Plant Pathology - Federal-grant

79 - Diseases of stone and pome fruits

80 - An investigation of fungal colonization of the feeder-root systems of "normal" crop plants

159 - Market quality of peaches as affected by fruit decay in transit

231 - The nature of the influence of various sources of carbon in soil on fungus induced root diseases (W-38)

6. Plant Pathology - Non-Federal

82 - Diseases of sugar beets

84 - Diseases of potatoes

89 - Chemical aspects of resistance to Cercospora leaf-spot in sugar beets

142 - Diseases of onions

149 - Sugar beet phytopathological investigations

181 - Turf diseases

215 - The role of nematodes in root diseases of economic plants (W-56)

7. Soils - Federal-grant

242 - Soils, pesticides and the quality of water (W-82)

8. Veterinary Science - Federal-grant

230 - The effect of parasitism upon the absorption of essential amino acids (W-35)

8. Veterinary Science - Non-Federal

800- - The effect of parasitism upon the absorption of essential amino acids  
230

COLORADO (cont'd)

9. Weeds - Federal-grant

- 81 - Weeds detrimental to the agricultural and livestock industries and other interests in the state
- 83 - Factors affecting the toxicity and selectivity of pre-emergence soil herbicides
- 216 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

9. Weeds - Non-Federal

- 63 - Improvement and management of oakbrush ranges
- 152 - Effect of machinery, herbicides, and soils on control of weeds in sugar beets
- 180 - Turf research

## CONNECTICUT

### 2. Entomology - Federal-grant

- 302 - Biological characteristics of hybrid flies as test organisms
- 303 - Inquiry into the possible physiologic induction of insecticide resistance in the house fly
- 305 - Host preference and feeding habits of Scolytus multistriatus Marsh. and their relationship to control
- 306 - Control of insects and mites on apples
- 307 - The biology and control of sucking insects on pine
- 308 - Behavior of stream insects
- 316 - Behavior of aphids in host selection
- 326 - Studies on improvement of the effectiveness of B. thuringiensis

### 6. Plant Pathology - Federal- grant

- TCN - Nature of the stimulated hatching of eggs of the tobacco cyst
- 610 nematode by fungicides and other compounds and their use in control
- 634 - Dynamics of fungicidal action
- 639 - Pathogenesis by soil-borne organisms
- 645 - The chemotherapy of plant diseases
- 652 - Pathology of the wilt disease of trees in the northeast (NE-25)
- 653 - Root injuries caused by nematodes and root diseases

### 9. Weeds - Federal-grant

- 604 - Chemical control of weeds in nursery and turf plantings



CONNECTICUT (STORRS)

2. Crop Breeding - Non-Federal

- 321 - Responses of deciduous fruits to variations of cultural and storage conditions

3. Economics - Federal-grant

- 351 - Consumer awareness and attitudes toward the use of pesticides on food products

9. Weeds - Federal-grant

- 333 - Germination, development and crop competition of smooth and hairy crabgrass under varying environmental conditions (NE-42)

9. Weeds - Non-Federal

- 162 - The use of herbicides in forage crop management

10. Miscellaneous - All Other - Federal-grant

- 352 - Lipolysis of milk and other animal fats as influenced by pesticide residues and its relationship to marketability

2. Crop Breeding - Federal-grant

48-H - Breeding vegetable crops

70-P - Breeding and development of soybeans resistant to plant pathogens

5. Entomology - Federal-grant

5-E - Insect control on miscellaneous vegetables

6-E - Distribution and abundance of economic insects and their damage to crops in Delaware

62-E - Control of insects and mites on soybeans, alfalfa and clovers

62-E - Control of insects and mites on soybeans, alfalfa, and clovers  
Supp

72-E - Search for a chemical which repels the smaller European elm bark beetle

75-E - Oil-fungicide compatibility and new insecticides for apple pests

94E - Chemical and biological control of insects affecting ornamental plants

5. Entomology - Non-Federal

2-E - Mosquito investigations: Bionomics of pest mosquitoes  
NIH

728E - Study of the status of insecticide toxicity and effectiveness of non-chemical methods in controlling pest mosquito populations in Delaware

729E - Relation of wildlife management practices to mosquito prevalence

6. Plant Pathology - Federal-grant

15-P - Host-parasite relationships of plants and species of Meloidogyne (NE-34)

19-P - Diseases of peppers with special reference to bacterial spot and viruses

20P - Lima bean diseases: root-rot and anthracnose

- 74P - Influence of selected chemicals on the biochemistry of fungal and bacterial cells
- 79-P - Control of pathogens causing diseases of legumes and grasses
- 93-P - Apple scab and its control
- 95 - Control of cucurbit diseases
- 102P - Root and crown diseases of alfalfa and red clover (NE-45)
- 121P - Root rot of broadleaf and coniferous evergreens

6. Plant Pathology - Non-Federal

- 616P - The evaluation of new fungicides
- 703P - Commercial grants for the development and testing of new fungicides
- 750P - Fungicidal effects on vital acids and sugars of fungi

8. Veterinary Science - Federal-grant

- 110 - Biology of avian coccidia

8. Veterinary Science - Non-Federal

- 741 - Screening protozoacides  
PS

9. Weeds - Federal-grant

- 11-H - Control of weeds in vegetable crops with herbicides
- 92-H - Studies of the life history of barnyardgrass (Echinochloa crusgali (L.) Beauv) as related to possible methods of control (NE-42)
- 96 - Corn and soybean weed control
- 104 - Weed control in fruit crops, with special reference to apple and peach
- 104 - Weed control in fruit crops, with special reference to apple and peach  
Supp

9. Weeds - Non-Federal

664A - Pre-emergence and post-emergence crabgrass control on turfgrass

754-H - An evaluation of various new herbicides for control of weeds in  
L-5-1 ornamental plants

2. Crop Breeding - Federal-grant

- 20 - Peanut breeding for superior types for market and for livestock feed
- 372 - Flue-cured tobacco improvement
- 374 - Corn breeding
- 783 - Breeding and selection
- 1135 - Breeding for disease resistance in lupines

2. Crop Breeding - Non-Federal

- 398 - Breeding for combined resistances to diseases in tomato
- 719 - Agronomy, breeding and pathology investigations of fiber crops
- 737 - Gladiolus breeding
- 823 - Developing peach varieties adapted to Florida conditions
- 827 - Chemical treatments of fresh vegetables to reduce decay losses during marketing
- 887 - Breeding of improved pole bean varieties for commercial production in Florida
- 944 - Selecting lemon varieties for Florida production
- 1022 - The effect of selected micro-elements and organic fungicides on the growth, yield and chemical composition of Chrysanthemum morifolium
- 1024 - Development of improved varieties of cigar-wrapper tobacco
- 1026 - Agronomic studies of Dioscorea in south Florida
- 1089 - Improvement of pest control and nutritional practices for caladium tuber production
- 1104 - Breeding bunch grapes for commercial and home use in Florida
- 1128 - Evaluation of certain citrus rootstock selections for resistance to burrowing nematodes

4. Engineering - Non-Federal

- 1020 - Development of equipment for the application of soil fumigants to the mineral and organic soils of central Florida
- 1163 - Testing, improvement and development of agricultural chemical application equipment

5. Entomology - Federal-grant

- 780 - Influence of cultural practices on the incidence and control of insect infestations in flue-cured tobacco
- 952 - Adaptation and standardization of methods of pesticide residue analysis on Florida crops and animal products (S-22)
- 996 - Toxicology of insecticides and miticides
- 1108 - Biology of Ips bark beetles (Coleoptera: Scolytidae) attacking slash and longleaf pine
- 1202 - Centralized pesticide residue investigations of the southern agricultural experiment stations (S-58)

5. Entomology - Non-Federal

- 471 - Biology and control of insects affecting winter vegetable crops
- 531 - Control of insect and arachnid pests of woody ornamentals
- 678 - Biology and control of insect and related pests of turfgrasses
- 835 - Chemical control of scales and other insects infesting citrus
- 836 - Chemical control of mites damaging citrus
- 841 - Identification, biology and control of subterranean insect pests of the Everglades area
- 852 - Identity, biology and control of insect and arachnid pests of herbaceous ornamental plants
- 889 - Testing and evaluating insecticides
- 905 - Investigations on biology and control of insects and mites attacking the pecan
- 934 - Taxonomy and biology of mites associated with citrus in Florida



## FLORIDA (cont'd)

- 959 - Ecology of natural control of injurious insects and mites on citrus
- 962 - A synecological study of the effects of the fire ant eradication program
- 993 - Biology of wireworms injurious to Irish potatoes
- 1075 - The effects of insecticides on the inter-relationship of insects of economic importance and their parasites
- 1094 - Biology and control of arthropod pests of subtropical fruits
- 1095 - Methods of applying systemic insecticides to plants
- 1106 - Pesticide residues and toxic metabolites on and in plant and animal products
- 1143 - Evaluation of equipment for the application of pesticides on citrus
- 1144 - Bio-assay of insecticide-treated soils
- 1146 - Control of postharvest chemical residues in or on citrus fruits
- 1184 - Chemical control of insects and other pests attacking vegetable crops
- 1188 - Interrelations of blue stain fungi and Ips bark beetles attacking longleaf and slash pine in Florida
- 1214 - Chemical control and limited physical autecology of insects attacking cigar-wrapper tobacco
- 1222 - Identification, biology and control of insects attacking sweet corn
- 1223 - Identification, biology and control of insects attacking celery

### 6. Plant Pathology - Federal-grant

- 947 - The nature of plant viruses
- 978 - Induced tolerance and related processes through which crop plants retard development of infectious diseases
- 979 - Asexual variability in plant pathogens
- 980 - Host-parasite relationships of certain nematodes and crop plants in Florida

- 1098 - Pathogenicity and other host-parasite relationships of plant nematodes on turfgrasses
- 1112 - Virus diseases of ornamental plants
- 1138 - The nature of virus diseases of citrus and their inter-relationships with other plant virus diseases

6. Plant Pathology-- Non-Federal

- 279 - Nature, importance and control of diseases of minor fruits and ornamentals
- 336 - Control of cercospora blight of celery
- 422 - Diseases of the Tahiti (Persian) lime
- 502 - Control of gladiolus corn diseases
- 506 - Control of curvularia and botrytis diseases of gladiolus
- 563 - Causes and control of diseases of potted plants
- 588 - Control of soil organisms causing "damp off" and root rots of nursery plants
- 677 - Control of diseases of unstaked tomatoes grown on the sandy soils of south Florida
- 773 - Control of spreading decline of citrus
- 774 - Pathogenic complex of citrus spreading decline
- 779 - Control of cucumber diseases on the west coast of Florida
- 802 - Diseases of turfgrasses
- 911 - Effectiveness of chemical barriers for preventing migration of nematodes in citrus groves
- 912 - Fungicidal control of melanose, scab, and brown rot of citrus fruit
- 917 - The effects of nutrition and potting media on growth and flowering of certain epiphytic orchids
- 933 - The citrus nematode, Tylenchulus semipenetrans, in relation to declines of citrus

FLORIDA (cont'd)

- 935 - Greasy spot of citrus and its chemical control
- 943 - Etiology and control of virus diseases in citrus
- 954 - Fungicidal control of watermelon foliage diseases
- 992 - Nematodes - their effects and control on vegetable and ornamental crops
- 994 - Nature, cause and control of diseases of cut flowers
- 997 - Yellow strapleaf of Chrysanthemum morifolium Ram
- 1008 - Biochemical factors affecting phytopathogenesis
- 1021 - Nature, cause and control of diseases of tropical foliage plants
- 1056 - Control of helminthosporium leaf blights of sweet corn
- 1060 - Etiology and control of diseases of staked tomatoes on the west coast of Florida
- 1072 - Evaluating fungicides alone and in combination with insecticides for vegetable crops
- 1074 - Chemical control of nematode root rot complex of shade-grown tobacco
- 1076 - Host-parasite relationship between burrowing nematode, Radopholus similis (Cobb) Thorne, and certain tropical and subtropical fruit plants
- 1086 - Control of tomato diseases in Dade county
- 1090 - Damping off and root rots of vegetable crops
- 1091 - Etiology and control of bacterial diseases of vegetables
- 1097 - Verticillium wilt
- 1102 - Screening citrus rootstocks for tolerance to tristeza virus
- 1149 - Identification, pathogenicity and control of stylet-bearing nematodes associated with chrysanthemum production in Florida
- 1151 - Chemical control of soil fungi, nematodes, and weeds affecting watermelons

## FLORIDA (cont'd)

- 1169 - Compatibility of insecticides, fungicides, and foliar fertilizers in spray mixtures
- 1177 - Eradication and prevention of nematodes attacking woody and foliage ornamental plants in Florida nurseries
- 1193 - Investigations on the bionomics of the plant nematode Trichodorus christiei
- 1196 - Relative abundance and pathogenic potentials of some stylet nematodes associated with citrus in Florida
- 1198 - Decay control of Florida citrus fruit

### 8. Veterinary Science - Federal-grant

- 1115 - Control of certain internal parasites of cattle
- 1152 - Piroplasmosis (Babesiosis) of horses
- 1161 - Control of strongyloidiasis in swine

### 8. Veterinary Science - Non-Federal

- 1101 - Control of parasite infection in sheep

### 9. Weeds - Federal-grant

- 1087 - Chemical control of weeds in field crops
- 1131 - Leaching characteristics of certain herbicides in selected soils (S-18)

### 9. Weeds - Non-Federal

- 591 - Chemical weed control for commercial vegetable production
- 692 - Herbicidal weed control in sugarcane
- 807 - Chemical control of noxious plants in native and improved pastures and adjacent areas
- 945 - Weed control in citriculture
- 1029 - Chemical control of ditchbank weeds in peat and sandy soil areas of south Florida
- 1088 - Chemical control of weeds in vegetable crops on organic soils
- 1092 - Chemical weed control in commercial cut-flowers

FLORIDA (cont'd)

1124 - Evaluation of herbicides for control of aquatic weeds

1241 - Herbicides in forage production

10. Miscellaneous - All Other - Federal-grant

1242 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

10. Miscellaneous - All Other - Non-Federal

444 - Permanent Seed Beds for Tobacco Plants

712 - Vegetable-Pasture Rotation Studies for Sandy Soils



## GEORGIA

### 1. Animal Science - Non-Federal

- 1-5 - Preliminary evaluation of new products or practices of potential value to animal industry
- 2- - Responses of dairy cattle fed feedstuffs containing residues of  
112 certain agricultural chemicals

### 2. Crop Breeding - Federal-grant

- 26 - Cotton Breeding
- 29 - Breeding and testing soybeans
- 31 - Evaluating small grains for resistance to major diseases
- 42 - Breeding and culture for the improvement in production and utilization of sericea and crimson clover
- 85 - Improvement of the muscadine grape through breeding for higher quality, perfect-flowered types, and increased bunch and fruit size
- 86 - The causes of premature mortality of peach trees when set on land previously planted to peaches
- 87 - Improvement of blackberries, dewberries, and blueberries through breeding and selection and the development of adequate production practices
- 88 - Breeding pimiento for disease resistance and ability to set fruit under climatic conditions of Georgia
- 89 - Improvement of sweet potato varieties for table purposes through breeding
- 92 - Improvement of type and disease and insect resistance in southern peas (Vigna sinensis) through breeding
- 149 - Breeding improved varieties of wheat, oats and barley for grain and forage
- 161 - Genetic studies, breeding, and variety evaluation of sorghum
- 172 - Agronomic evaluation of new plants for the production of oils, gums, drugs and insecticides (S-9)
- 174 - Evaluation of new ornamental plants (S-9)



## GEORGIA (cont'd)

- 202 - Small grain breeding
- 203 - Upland cotton breeding for coastal plain conditions
- 204 - Peanut breeding and improvement
- 219 - Interrelation between irrigation, fertilizer, and soil fumigation with spring and summer horticultural crops

### 2. Crop Breeding - Non-Federal

- 1-8 - Variety evaluation, cultural pruning and spraying practices with pears
- 1-12 - Evaluation of rose varieties in the Piedmont area of Georgia
- 1-17 - Adaptation and management of grapes in north Georgia
- 2-7 - Corn breeding for coastal plain hybrids
- 2-16 - Turf production studies
- 2-22 - Lupine breeding, selection and quality investigations
- 2-24 - Small grain variety tests
- 2-31 - Breeding and variety improvement studies of shade-grown tobacco
- 2-36 - Breeding and variety improvement of flue-cured tobacco
- 2-63 - Sweet potato studies
- 2-68 - Vegetable production and miscellaneous studies on bladen and associated soils
- 2-69 - Fertilization, breeding and cultural studies of vegetable crops
- 2-114 - Official variety testing of flue-cured tobacco

## GEORGIA (cont'd)

- 2- - Sweetpotato breeding, genetics, cytogenetics, and diseases  
122
- 3- - Small grain variety investigations  
41
- 3- - Grain sorghum improvement  
52
- 3- - Application of interspecific hybrids in Gossypium to practical  
59 cotton breeding
- 3- - Improvement of tomato production in Georgia by breeding and  
84 testing
- 3- - Rose variety trials for northeast Georgia  
91
- 3- - Evaluation of corn inbreds and hybrids  
103
- 3- - Resistance of cotton to the boll weevil  
284
- 4- - Forage crops and pasture investigations  
10

### 3. Economics - Federal-grant

- M-190 - Methods and practices of purchasing and utilizing agricultural  
pesticides

### 5. Entomology - Federal-grant

- 67 - Studies on cotton insects and their control
- 68 - Sweetpotato insects and their control
- 148 - Arthropod pests of livestock in Georgia, their distribution,  
biology, and control
- 154 - Biology and control of insect pests of ornamental plants
- 176 - Insects affecting alfalfa (S-55)
- 177 - Biology, ecology, and control of insects affecting forage crops
- 216 - Toxicity of insecticides to various insects under controlled  
conditions with emphasis on field crop insects

GEORGIA (cont'd)

5. Entomology - Non-Federal

- 2- - Vegetable crop insect control  
53
- 2- - Field crop insect control  
54
- 2- - Controlling the pests of honeybee colonies  
96
- 2- - Biology and control of the southern rootworm and other  
110 injurious insects of peanuts
- 2- - Investigation of residues of new pesticides when ingested by  
111 beef cattle
- 2- - Controlling the insect pests of flue-cured tobacco in the field  
124
- 3- - The effectiveness of insecticides, under controlled conditions  
70 against the various economically important pests in Georgia
- 3- - Survey of mites of agricultural importance in Georgia  
171
- 3- - Population and host association studies of mites  
228
- 3- - Study of hardwood insects with special emphasis on the biology  
271 and control of the elm spanworm
- 3- - Improvement of direct control methods of pine bark beetles  
293
- 3- - Biology and control of bark beetles attacking conifers -- with  
294 special emphasis on the southern pine beetle
- 3- - Studies on the biology of the imported fire ant  
296
- 3- - Ecological studies of chiggers - their effects and control on  
311 turkeys in Georgia
- P- - Study of hardwood insects with special emphasis on the biology  
156a and control of the elm spanworm

6. Plant Pathology - Federal-grant

- 97 - Taxonomy of the graminicolous species of Helminthosporium
- 102 - Control of peanut diseases
- 115 - Control of peach diseases
- 140 - The effectiveness of the newer nematocides, miticides, fungicides, and certain cultural practices on the growth, yield, and market quality of strawberries
- 146 - Purification, serological, and biochemical studies of cowpea viruses
- 151 - Control of fire blight and other diseases of pears
- 220 - The evaluation of chemical compounds as nematocides and for adaptability to crops and soil conditions (S-19)

6. Plant Pathology - Non-Federal

- 1- - Apple diseases and insects and their control  
14
- 1- - Disease and insect control of truck crops  
16
- 2- - Diseases of forage and turf grasses  
20
- 2- - Disease and insect control on shade-grown tobacco  
30
- 2- - Root disease control in flue-cured tobacco  
34
- 2- - Leaf disease control in flue-cured tobacco  
35
- 2- - Azalea and camellia and other ornamental diseases  
77
- 2- - Lily diseases and Liliaceae culture  
78
- 2- - Forage legume disease investigations  
82

## GEORGIA (cont'd)

- 2- - Diseases of southern peas  
105
- 2- - Nature of causal agents of diseases of cucurbits and methods  
106 for their control
- 2- - Nature of causal agents of diseases of tomatoes, peppers,  
107 and related plants and developing methods of control
- 2- - Studies on the control of brown spot (Alternaria longipes) on  
115 tobacco
- 2- - Peanut seed infection by fungi and the effects of soil  
119 conditions on development of the pathogens
- 2- - The evaluation of chemical compounds as nematocides and for  
125 adaptability to crops, soil conditions and other pesticide  
programs
- 3- - Cotton seedling diseases  
96
- 3- - The effects of fungicidal soil drenches and dusts on  
183 damping-off of cotton seedlings
- 3- - Investigations on the fusarium wilt and root-lesion nematode  
212 interaction in cotton
- 3- - Soil fumigation studies in nematode infested cotton fields in  
225 the piedmont section of Georgia
- 3- - Corn seedling disease studies  
248
- 3- - Sporophore production and sporulation by Peniophora gigantea  
297
- 3- - Red root and butt rot of pines caused by Polyporus tomentosus  
299

### 7. Soils - Federal-grant

- 195 - The disposition of pesticides in the soil (S-62)
- 382 - The disposition of pesticides in the soil (S-62)

8. Veterinary Science - Federal-grant

- 59 - Effect of pasture management on control of internal parasites of cattle
- 60 - Ecology of cattle nematodes on pasture crops and certain nutritional factors that may influence internal parasite survival or development in the animal
- 213 - The anthelmintic effect of phenothiazine and other drugs on parasites of ruminants

8. Veterinary Science - Non-Federal

- 2- - Swine management as related to internal parasite infestation  
49
- 2- - Control of swine kidney worms by herd management  
88
- 3- - Economic significance of helminth parasites as demonstrated  
110 under controlled conditions
- 3- - Field comparisons of commercial coccidiostats  
113
- 3- - Life cycles and physiological studies of avian cestodes  
253

9. Weeds - Federal-grant

- 32 - The use of chemicals for weed control and defoliation of crop plants
- 33 - Control of noxious perennial weeds by chemical and cultural methods (S-18)
- 150 - Evaluation of chemicals for weed control in the establishment, maintenance, and renovation of pastures
- 162 - Life history of horsenettle (Solanum carolinense L.) and its response to herbicides as influenced by growth and climatic and edaphic factors (S-18)



GEORGIA (cont'd)

9. Weeds - Non-Federal

- 2-     - The control of weeds in peanuts with herbicides and herbicide  
113       mixtures
- 2-     - Development of weed control practices for use in the plant  
117       industry
- 2-     - Weed control investigations in seeded and transplanted  
120       vegetable crops

10. Miscellaneous - All Other - Federal-grant

- 25     - Factors affecting the germination of cotton and winter legume  
      seed
- 152    - Establishment, management, and evaluation of turf grasses
- M-     - Reduction or elimination in commercial channels of adverse  
192       effects of pesticide residues on food and feed products (SM-32)

10. Miscellaneous - All Other - Non-Federal

- 2-     - Pasture and range production, culture and management  
14       investigations
- 3-     - The effect of irrigation and row spacing on agronomic characters  
176       and disease incidence of grain sorghum grown under high  
      fertilization
- 3-     - Effect of burning on forage production of coastal bermudagrass  
303       and pensacola bahiagrass

## HAWAII

### 1. Animal Science - Non-Federal

- 408 - Metabolism and deposition of insecticides in the fowl  
-S

### 2. Crop Breeding - Federal-grant

- 138 - Production, management and assay of drug and specialty crops in  
-F Hawaii
- 802 - Cucurbit and legume breeding
- 804 - Improvement of leafy vegetable crops, lettuce, cabbage (head and  
oriental), cauliflower and broccoli
- 805 - Tomato and sweet pepper improvement and genetics
- 806 - Root crop improvement
- 809 - Improvement of commercial strains of papaya (Carica papaya L.)

### 2. Crop Breeding - Non-Federal

- 135 - Evaluation of Lawn Grasses in Hawaii
- 801 - Cultural studies in vegetable crops
- 824 - Improvement and genetics of sweet corn
- 831 - Production, disease control and varietal adaptation studies of  
the potato, Solanum tuberosum, in Hawaii
- 833 - Improvement of peaches adapted to tropical latitudes

### 5. Entomology - Federal-grant

- 953 - Ecology, biology, and control of fruit flies (Tephritidae) of  
economic importance in Hawaii
- 955 - Infectious diseases of insects in Hawaii and the use of  
microorganisms for the control of insect pests
- 956 - Investigations on the biology and control of Hawaiian mites
- 957 - Insecticidal formulations and their effects on plants and insects,  
especially the fruit flies (Tephritidae)
- 958 - Biology, ecology, and control of termites

## HAWAII (cont'd)

- 961 - Insect vectors of viruses that cause diseases in plants in Hawaii
- 970 - Parasites of the green stink bug, their biology and effectiveness  
-F
- 971 - Biology and systematics of entomophagous insects  
-F
- 972 - The effect of insect pathogens, especially the fungi, on the southern green stink bug, Nezara viridula
- 974 - Behavior and population studies on the southern green stink bug, Nezara

### 5. Entomology - Non-Federal

- 950 - General entomology upkeep projects
- 952 - Taxonomy
- 960 - Importance of biological agents in combating insect and weed pests
- 964 - Insecticide metabolism & deposition of insecticides in the fowl
- 965 - Study of biology and control of Nezara viridula var. smaragdula (Fabr.)
- 966 - Biology and control of Aedes vexans nocturnis (Theobald)
- 967 - Genetic studies of evolution in Hawaiian Drosophilidae
- 969 - Systematic studies of scale insects
- 975 - Insects of acerola
- 976 - Biology and control of cattle grubs
- 977 - Susceptibility of the southern green stink bug, Nezara viridula, to insecticides
- 978 - Effect of several organic phosphates on the immature stages of southern green stink bug
- 979 - Biology, ecology and control of Hawaiian Nysius bugs  
-S

6. Plant Pathology - Federal-grant

- 609 - Alkyl dithiocarbamate fungicide residues and their phytotoxicity (W-45)
- 703 - Studies on the control of alternaria brown spot of passion fruit
- 704 - Diseases of orchids in the territory of Hawaii
- 705 - The interrelation of nematodes and other pathogens in plant disease complexes (W-56)
- 706 - Identification and determination of the pathogenicity of nematodes on sugar cane
- 707 - The effect of organic residues on the growth of Fusarium oxysporum f. niveum in soil (W-38)
- 710 - The effect of papaya residue on pythiaceous fungi and the role of these fungi in the papaya replant problem
- 713 - Studies on the control of bacterial wilt of tomato caused by Pseudomonas solanacearum
- 715 - The ecology of Phytophthora cinnamoni Rands in forest soils  
-F
- 716 - Investigation of the biology of the diseases caused by the wilt bacterium Pseudomonas solanacearum in Hawaii as a prerequisite to control of non-pesticide means

6. Plant Pathology - Non-Federal

- 700 - General plant pathology upkeep  
-S
- 709 - The biology and control of Phytophthora diseases in Hawaii
- 711 - Identification and control of root infesting nematodes on economic crops of Hawaii
- 712 - Banana diseases in Hawaii
- 714 - Comparative studies of papaya viruses in Hawaii  
-S

7. Soils - Federal-grant

- 141 - Soil, pesticides, and the quality of water (W-82)

8. Veterinary Science - Federal-grant

- 902 - A study of helminth infection of cattle during their first year of growth (W-35)

8. Veterinary Science - Non-Federal

- 900 - General parasitological upkeep project
- 905 - Survey of parasites of rats in the Pacific with special reference to the distribution and host parasite relations of Angiostrongylus cantonensis

9. Weeds - Federal-grant

- 126 - Chemical control of weeds and other noxious plants in Hawaii
- 127 - Accumulation movement and residual effects of herbicides in relation to properties of tropical soils

9. Weeds - Non-Federal

- 666 - Selective action of herbicides on crops and weeds under four climatic and edaphic conditions
- 669 - The catabolism of 3-amino-1,2,4-triazole and related heterocyclic rings in plants
- 820 - Weed control in horticultural crops
- 827 - Herbicide screening trials with vegetable crops, bananas and other horticultural crops



2. Crop Breeding - Federal-grant

- 212 - Control of curly top on tomato by breeding
- 215 - Breeding curly-top resistant garden beets and swiss chard
- 220 - Wheat breeding for disease resistance and quality
- 253 - Breeding hybrid onion varieties for storage and dehydration in Idaho
- 261 - Testing and evaluating agronomic and horticultural crops for Idaho agriculture (W-6)
- 278 - Genetics and onion breeding
- 354 - Development of horticulturally improved and disease resistant vegetable crops
- 503 - Development of virus and root rot resistant, high quality dry and snap bean varieties and the inheritance of mosaic virus and curly top virus resistance

2. Crop Breeding - Non-Federal

- S- - Potato breeding  
155
- S- - Effects of plant population and distribution on the production of  
490 beans for seed

5. Entomology - Federal-grant

- MS - Effects of methyl demeton on douglas-fir and its cone and seed  
-5 insects and rodent indicator species
- 252 - The biology of mites that feed on crops and other plants and the damage caused in Idaho
- 286 - Bionomics of stored grain insects affecting the marketability of grain (WM-16)
- 336 - Insect pollination of vegetable seed crops
- 360 - The life history, ecology, and control of insects associated with the intermountain shrub type in southern Idaho
- 399 - Physiological variability as a factor influencing grasshopper population changes (W-37)



## IDAHO (cont'd)

- R- - Biological activities of seed chalcids in legume seed (W-74)  
430
- 440 - Biological control of the pea aphid in Idaho by introduced  
parasites
- 455 - The relationship of insects to virus diseases of small-seeded  
forage legumes in Idaho
- 473 - Effect of Lygus spp. on carrot seedling vigor and carrot  
resistance to lygus
- 487 - Soil factors affecting the activity, movement, and alteration of  
some chlorinated hydrocarbon pesticides (W-45)

### 5. Entomology - Non-Federal

- S- - Survey of the insects of Idaho  
203
- S- - The relationship of insects to the leafroll virus disease of  
323 potato
- 505 - Rate of dieldrin build-up in the fatty tissues of beef cattle fed  
different levels of aldrin and rate of dissipation of the  
residues following discontinuance of aldrin feeding

### 6. Plant Pathology - Federal-grant

- 250 - The identity and control of cankerous aerial disorders in  
orchard trees
- 290 - Identification, etiology, and control of virus diseases of  
deciduous fruit trees (W-64)
- 300 - Nature of the influence of certain crop residues on the  
population and pathogenicity of onion root-and bulb-rotting  
fungi (W-38)
- 322 - The nature of legume viruses
- 341 - Carotenoid pigment production and nutritional requirements of  
certain gram negative bacteria isolated from soil and water
- 392 - The composition of the curly-top virus complex and its relation  
to other viruses in common suspects

## IDAHO (cont'd)

- 394 - The interrelation of nematodes and other pathogens in plant disease complexes (W-56)
- 444 - A study of the ecology of soil borne potato pathogens as affected by crop residues and microclimate
- 452 - Snow mold and soil antagonists
- 467 - Fusarium root rot of beans: inheritance of resistance to Fusarium solani f. phaseoli and investigations on the nature of resistance
- 490 - Factors responsible for the spread and dissemination of the stalk rot disease of corn

### 6. Plant Pathology - Non-Federal

- S- - Relationships of overwintering hosts, symptomatology and strains  
319 to the potato leafroll virus
- S- - The biology and control of downy mildew and virus diseases of  
415 hops
- 454 - Potential resistance to foot rot and root rot of wheat
- 465 - Testing of domestic and foreign varieties of beans (Phaseolus vulgaris L and others) for resistance to root rot caused by Fusarium solani f phaseoli
- S- - Root-knot nematode infection of potato plants and symptom  
471 expression in potato tubers
- 489 - The composition and metabolism of sclerotia of Sclerotinia sclerotiorum (Lib.) D By.

### 7. Soils - Federal-grant

- R- - Soils, pesticides and the quality of water (W-82)  
516

### 8. Veterinary Science - Federal-grant

- 391 - Genetic resistance to nematode infections in sheep with special reference to Ostertagia sp (W-35)

### 9. Weeds - Federal-grant

- 436 - Investigations on dodder (Cuscuta spp.) control

IDAHO (cont'd)

- 501 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

9. Weeds - Non-Federal

- S- - Weed research and control  
130

- S- - Weed control on the non-irrigated lands of Idaho  
131

- S- - Chemical weed control in potatoes  
404

- 498 - Studies concerning the control of medusahead and halogeton in Idaho

- 502 - Herbicidal and cultural practices of downy brome control in the winter wheat-fallow system

10. Miscellaneous - All Other - Federal-grant

- 466 - Pseudocholinesterase activity as affected by modern agricultural chemicals

## ILLINOIS

### 1. Animal Science - Federal-grant

- 35- - The effect of extraneous contaminants on cellular metabolism  
327

### 2. Crop Breeding - Federal-grant

- 15- - Varietal improvement and genetic behavior of forage legumes  
375
- 65- - Breeding, genetics, and cytology of commercially important  
325 characters in the apple
- 65- - Genetic investigations on economic characters of tomato  
332
- 65- - Genotypic influence on certain genetic characters in sweet corn  
349

### 2. Crop Breeding - Non-Federal

- 65- - Tree nut and persimmon breeding  
315
- 65- - Breeding, genetics, and cytology of pears  
317
- 65- - Pear breeding  
321
- 65- - Trial and experimental garden for annuals, herbaceous perennials,  
360 and other outdoor ornamentals
- 65- - The testing and evaluation of woody plant materials in Illinois  
361
- 68- - Breeding corn for disease resistance  
353

### 3. Economics - Federal-grant

- 60- - A study of Illinois consumers' reaction to use of pest control  
365 on agricultural products

5. Entomology - Federal-grant

- 12- - Fundamental problems associated with the use of pesticidal  
311 chemicals in soils (NC-19)
- 12- - The magnitude, character, and persistence of insecticide  
312 residues on or in food, feed, and forage crops (NC-33)
- 12- - Migration of the potato leafhopper and its causes  
314
- 12- - Ecology and control of pasture and meadow insects  
315
- 55- - Insects in coniferous plantations  
372

5. Entomology - Non-Federal

- 65- - The systematics, biology and ecology of the genus Anthidium  
326 (Hymenoptera, Megachilidae) in North America

6. Plant Pathology - Federal-grant

- 55- - Application of measures for the control of oak wilt in an  
351 intensively managed forest (NC-22)
- 68- - Foot-and-root-rotting fungi of wheat and oats and their inter-  
345 actions with barley yellow dwarf virus (Byvd.) infection
- 68- - Soil-disinfesting chemicals and their effects on plant-pathogenic  
349 soil micro-organisms and on plant growth
- 68- - Etiology of pathogenic organisms associated with corn stalk rot  
351
- 68- - Etiology, epidemiology and control of diseases of grasses used  
360 for lawns and turf
- 68- - Plant-virus purification and characterization  
371
- 68- - Physiology and biochemistry of plant pathogenic fungi  
373
- 68- - Research on antibiotics and fungus physiology  
375
- 68- - Biology of root infecting fungi  
376



## ILLINOIS (cont'd)

68- - Fungus diseases of fruits and their control

377

68- - Host-parasite interaction in relation to control of bacterial  
379 diseases of fruit

68- - Feeding habits and biological significance of plant-parasitic  
380 and predaceous nematodes (NC-39)

### 6. Plant Pathology - Non-Federal

68- - Genetics and physiology of host-parasite interactions

352

68- - Biochemistry of plant infections

370

68- - Physiology and biochemistry of plant pathogenic fungi

373

68- - Research on viral diseases of plants

382

### 8. Veterinary Science - Federal-grant

70- - Pharmacologic study of chemical agents

328

70- - Producing and maintaining sheep free of gastrointestinal

335 nematodes

### 9. Weeds - Federal-grant

15- - Row cultivation vs. chemical weed control for corn and chemical

356 control of weeds and other vegetation where corn is planted with-  
out plowing

15- - Comparative effects of weed competition, herbicides and other

364 weed control practices on plant response

15- - Physiology and biochemistry of herbicide action in plants and

389 the absorption, movement, and rate of decomposition of herbicides  
in soils

### 10. Miscellaneous - All Other - Federal-grant

12- - Trace levels of pesticide residues in agricultural commodities in  
316 marketing channels (NCM-37)



2. Crop Breeding - Federal-grant

- 760 - Breeding and selection of forage grasses of agricultural value and local adaptation
- 960 - Improvement of tree fruits and small fruits by breeding for disease resistance, quality, and other characters
- 968 - Breeding of barley for Indiana and investigations of related genetic, pathological, and agronomic characters
- 969 - Soft winter wheat breeding, genetics, and pathology
- 973 - Breeding, testing, and distribution of superior dent corn hybrids
- 1048 - Improvement and evaluation of forage legumes
- 1127 - Alfalfa improvement through selection and breeding
- 1128 - Oat genetics, pathology and breeding
- 1173 - Breeding and evaluation of watermelon and muskmelon varieties for Indiana
- 1198 - Birdsfoot trefoil improvement through breeding and selection
- 1382 - Red clover improvement through selection and breeding for desirable agronomic characteristics and the control of diseases and insects
- 1393 - Breeding and evaluation of new varieties of tomatoes for processing in Indiana
- 1424 - Development of alfalfa resistant to the alfalfa weevil
- 1425 - Breeding for resistance in small grains to cereal leaf beetle Oulema melanopa

2. Crop Breeding - Non-Federal

- 801 - Breeding and evaluating new and improved varieties of soybeans
- 1332 - Variety testing of grain sorghum, forage sorghum and sudangrass
- 1408 - Turfgrass improvement through breeding and selecting

## INDIANA (cont'd)

### 5. Entomology - Federal-grant

- 906 - The effect of fungus products on arthropods
- 962 - The biology and control of the Zimmerman pine moth, Dioryctria zimmermani (Grote), in pine plantations
- 1095 - Importance and control of cattle grubs in Indiana
- 1203 - Improvement of alfalfa quality and yield through the chemical control of insects
- 1235 - Insecticide efficacy and residue as influenced by cuticular characteristics of plants (NC-33)
- 1261 - The ecology and control of the mimosa webworm, Homadaula albizziae (Clarke), in Indiana
- 1275 - The ecology and control of the Columbian timber beetle, Corthylus columbianus (Hopk.) (Coleoptera: Scolytidae)
- 1316 - Migration of aphids and noctuids (NC-67)
- 1350 - Bionomics of the cereal leaf beetle (NC-73)

### 5. Entomology - Non-Federal

- 1179 - Pesticide-soil colloid interactions
- 1253 - Effects of food storage on insecticides residues in dairy products
- 1262 - Biology and control of billbugs in Indiana
- 1304 - Factors affecting rate of growth and length of the developmental stage in the Odonata
- 1314 - Biology, ecology, and control of the face fly (Musca autumnalis DeGeer) in Indiana
- 1348 - Significant contaminant indices in degerminated corn products
- 1351 - Bionomics of selected North American culicine mosquitoes

### 6. Plant Pathology - Federal-grant

- 857 - The etiology and control of virus diseases of plants in Indiana
- 882 - Identification and control of tree and small fruit virus diseases in Indiana (NC-14)

## INDIANA (cont'd)

- 930 - Mold deterioration and its effect on losses of wheat and corn in storage
- 953 - Studies of etiology, epidemiology and chemical control of fruit diseases
- 970 - Host relationships, and methods of control of diseases of soybeans
- 1072 - Biology and control of nematodes parasitic on melons
- 1075 - The effect of fungus products on higher plants, algae, and viruses
- 1126 - Isolation, characterization and significance in plant disease resistance of amino acid-phenol addition compounds
- 1218 - Control of diseases of peppermint and spearmint with particular emphasis on verticillium wilt disease
- 1246 - Biochemistry of disease resistance in plants
- 1343 - Mechanisms of survival of root-infecting fungi in soil (NC-70)
- 1394 - The steroid-glycoalkaloids of tomato and potato and their significance in disease resistance
- 1406 - Virus diseases of deciduous tree fruits and their control (NE-14)

### 8. Veterinary Science - Federal-grant

- 1325 - The role of nitrite in blood and tissue changes in swine
- 1378 - The pathogenesis of ascariasis in pigs

### 8. Veterinary Science - Non-Federal

- 1050 - Studies on helminthiasis in domestic animals in Indiana
- 1196 - Studies on prenatal infection with Ascaris lumbricoides var. suis in swine

### 9. Weeds - Federal-grant

- 1020 - Evaluation and mode of action of chemicals used for selective weed control
- 1223 - The basis of selective action of herbicides in plants
- 1224 - Herbicide-soil colloid interactions

## INDIANA (cont'd)

1230 - Development of improved methods of analysis for herbicides and their residues

1392 - Soil-applied herbicide--nutrient element relationships of forest tree seedlings

### 9. Weeds - Non-Federal

1256 - The use of flame cultivation for control of weeds in field crops

1335 - Growth, development and control of Johnsongrass

### 10. Miscellaneous- All Other - Federal-grant

1253 - Effects of food processing and storage on insecticide residues

1423 - Accelerated removal of insecticide residues from domestic animals used for food production

1427 - Trace levels of pesticide residues in agricultural commodities in market channels (NCM-37)

2. Crop Breeding - Federal-grant

- 1176 - Development and testing of improved varieties of oats and other small grains
- 1179 - Development of superior soybean strains
- 1335 - Genetical and cytological studies of maize
- 1436 - Response of vegetable crops to environment
- 1455 - Selection and management of turfgrass species and strains
- 1575 - Development and evaluation of breeding principles and procedures for the improvement of corn hybrids

4. Engineering - Federal-grant

- 1521 - Development of specifications for improving machinery and methods for the control of weeds

5. Entomology - Federal-grant

- 1193 - The development of methods for controlling the European corn borer (NC-20)
- 1336 - The effects of pesticide residues on feed and forage fed to livestock (NC-33)
- 1435 - Biochemical studies of insects and chemicals used to control insects
- 1592 - Economic biology of corn rootworms

9. Weeds - Federal-grant

- 1519 - Herbicides: their adaptation to horticulture crops, and studies of contamination
- 1520 - Physiology and dormancy of weed seeds as related to control methods
- 1537 - Nature and extent of crop-weed competition between annual weeds and corn and soybeans (NC-61)
- 1589 - Seed dormancy condition, biological timetable for weed control



IOWA (cont'd)

10. Miscellaneous - All Other - Federal-grant

1624 - Trace levels of pesticide residues in agricultural commodities  
in marketing channels (NCM-37)



## KANSAS

### 2. Crop Breeding - Federal-grant

- 265 - The relationship between the use of some chemical compounds and cultural practices on the vegetative response and fruitfulness of fruit plants
- 287 - Multiplication, preservation and determination of potential value of forage grasses and legumes (NC-7)
- 462 - Sorghum breeding and testing
- 463 - Wheat breeding and testing
- 464 - Oats and winter barley breeding and testing

### 2. Crop Breeding - Non-Federal

- NEK - Northeast Kansas experimental field
- SEK - Horticultural investigations at the southeast Kansas experimental field
- SEK - Forestry investigations in southeastern Kansas
- F
- 26 - Small fruit investigations
- 183 - Alfalfa improvement through breeding and better management practices
- 277 - Investigations in greenhouse management
- 292 - Cereal crop improvement (small grains)
- 297 - Improvement of crop plants for southwestern Kansas
- 331 - Field crops investigation at Mound Valley Branch Experiment Station
- 401 - Turfgrass investigations
- 473 - Developing and testing pasture-type alfalfas
- 521 - Vegetable crop investigations
- 628 - Performance of cucurbits as influenced by varieties, culture methods and ecological factors

## KANSAS (cont'd)

- 629 - Cucurbit genetics, germ plasm evaluation and breeding
- 648 - The improvement of corn, Zea Mays, through breeding and genetics studies
- 676 - Vegetable research in southwest Kansas

### 5. Entomology - Federal-grant

- 164 - The resistance of crop plants to insect injury
- 211 - The effects of different systems of management of grasslands and conservation areas upon the insects injurious to grasses
- 284 - The corn earworm and other insects
- 322 - Insects affecting stored grain and milled grain products
- 409 - Control of insects injurious to alfalfa and allied plants
- 432 - Biology and control of insects affecting sorghums
- 440 - Factors influencing European corn borer populations (NC-20)
- 475 - Insect vectors of plant diseases
- 481 - Environmental factors influencing the magnitude, character and persistence of insecticide residues on or in food and forage crops (NC-33)
- 564 - Biology, distribution and control of insects affecting man and animals
- 578 - Factors influencing the distribution and abundance of grasshoppers (NC-52)
- 598 - Insects and mites attacking the growing wheat plant
- 661 - Migration of aphids and noctuids (NC-67)
- 671 - Biology and control of insects and related arthropods attacking forest and windbreak tree species
- 5- 788 - Relation of cattle diets to productivity of face flies and horn flies in cattle feces

### 5. Entomology - Non-Federal

- 460 - Insects attacking sugar beets

## KANSAS (cont'd)

- 519 - Biology and control of fruit insects
- 546 - Biology and distribution of insects
- 577 - Interaction of potential fumigant components as related to toxicology, residual hazards and other potential hazards such as fire and explosion
- 603 - Insect behavior
- 5- - Studies on mode of action of insecticides  
725
- 5- - Systematics of mites (Acarina: Mesostigmata)  
732
- 5- - Behavior and biology of arthropods associated with neotropical army ants  
738
- 5- - Sources and utilization of blood meals in insects  
739
- 5- - Functions of cholesterol and related sterols in insects  
740
- 5- - Biology and field ecology of the highly toxic brown recluse spider Loxosceles reclusa  
754
- 5- - Biology and control of insects attacking corn and alfalfa  
790
- 5- - Interrelations of aphids, dodders (Cuscuta spp.) and dodder host plants  
792
- 5- - Ecology and behavior of harvester ants (Pogonomyrmex) in Kansas  
817

### 6. Plant Pathology - Federal-grant

- 130 - Fruit and vegetable disease investigations
- 266 - Mycological investigations of parasitic fungi
- 334 - Investigations of mosaic and other virus diseases of hard red winter wheat

### 6. Plant Pathology - Non-Federal

- 76 - Investigations of cereal and forage crop diseases and their control

KANSAS (cont'd)

- 171 - A study of combined resistance to physiologic races of leaf and stem rust in winter wheat
- 318 - Investigations and control of virus diseases of stone fruits and other horticultural crops
- 499 - The investigation of the biology and control of plant parasitic nematodes
- 604 - Microbial ecology: the chemostat as a tool for studying competition in mixed populations
- 5- - Homology of DNA molecules between related phages and between  
813 phage of bacterium. Part I. Homology of DNA molecules in T3 and .7 phages of Escherchia coli. Part II. Homology of DNA molecules in mu-1 (Mutator) phage and host, Escherchia coli.
- 5- - DNA alterations in bacteria production between radiometric  
814 agent, n-methyl-n - nitro-n nitrosoquanidine

8. Veterinary Science - Federal-Grant

- 537 - Biology and control of endoparasites of poultry

8. Veterinary Science - Non-Federal

- 513 - Studies of parasitic diseases
- 5- - Basic evaluation of chemical compounds as Anthelmintics for  
771 nematodes (Ascaridia Galli, Meterakis Gallinarum, and Capillaria sp.

9. Weeds - Federal-grant

- 620 - Physiological and ecological response of weeds to control measures
- 621 - Weed control in horticultural crops

9. Weeds - Non-Federal

- 304 - Weed control investigations

10. Miscellaneous - All Other - Federal-grant

- 689 - Effect of pesticides on enzymes

KANSAS (cont'd)

10. Miscellaneous - All Other - Non-Federal

5- - Effects of insects and pesticides on sedimentation  
743 tests

## KENTUCKY

### 2. Crop Breeding - Federal-grant

- 151 - Breeding improved varieties of wheat, oats, and barley for Kentucky
- 152 - Breeding studies with tobacco
- 155 - Corn breeding
- 182 - Development of fundamental information and procedures of breeding tall fescue for palatability
- 555 - Development of new fruits adapted to Kentucky
- 558 - The development and evaluation of varieties for vegetable production in Kentucky

### 2. Crop Breeding - Non-Federal

- 631 - Fruit and nut variety trials
- 638 - Control of black and red raspberry cane mortality during winter and early spring
- 640 - Variety trials of woody ornamentals in Kentucky

### 3. Economics - Federal-grant

- 1022- Economic evaluation of chemical weed control on horticultural crops

### 5. Entomology - Federal-grant

- 451 - Control of subterraneous insect pests of tobacco plants
- 458 - Biology, ecology and control of insects attacking the aerial portions of tobacco plants
- 464 - The biology and control of insects and mites attacking strawberries
- 465 - Resistance of Nicotiana to arthropod pests
- 466 - Biology and control of insects attacking forage legumes
- 467 - Biology and control of insect and bird pests of small grains and grasses
- 468 - Biology, ecology and control of insects and mites attacking corn



## KENTUCKY (cont'd)

- 469 - Biology and control of insects and mites on vegetable crops
- 470 - Biology, ecology, and control of fly parasites of livestock
- 471 - Insects affecting alfalfa (S-55)
- 472 - Resistance in Nicotiana to tobacco hornworms and budworms

### 5. Entomology - Non-Federal

- 490 - Control of the codling moth, plum curculio, oriental moth and other important fruit pests
- 493 - Evaluation of selected insecticides, fungicides and herbicides
- 629 - Orchard spray service

### 6. Plant Pathology - Federal-grant

- 154 - Virus diseases of tobacco and tomato with special reference to the resistance of the viruses to heat and chemicals
- 158 - Virus diseases of forage legumes
- 159 - Identification and control of plant parasitic nematodes
- 177 - Fungal and bacterial diseases of legume forage crops
- 183 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)
- 560 - Internal browning of tomato fruit
- 851 - Studies of host-parasite interactions using plant tissue culture techniques

### 6. Plant Pathology - Non-Federal

- 221 - A study of miscellaneous diseases of tobacco (excluding virus diseases)
- 238 - Physiology and biochemistry of plant diseases
- 751 - Diseases of plants in plastic greenhouses

### 8. Veterinary Science - Federal-grant

- 353 - Parasites of horses
- 356 - Gastro-intestinal parasites of ruminants (S-21)

9. Weeds - Federal-grant

- 164 - Chemical and cultural control of weeds in agronomic crops
- 173 - Red sorrel (Rumex acetosella, L.), its growth, susceptibility to herbicides, and response to soil pH levels (S-18)
- 563 - Weed control in horticultural crops

9. Weeds - Non-Federal

- 613-1- Use of silvicides in stand improvement work

10. Miscellaneous - All Others - Federal-grant

- 417 - Effect of pesticide residues in milk on microorganisms important in the dairy industry

2. Crop Breeding - Federal-grant

- 277 - Cabbage breeding and intercrossing of other members of the genus Brassica for the purpose of obtaining new types with regional adaptability
- 373 - Oat breeding
- 395 - Development of high yielding disease resistant potatoes for Louisiana conditions
- 411 - The culture and breeding of onions
- 949 - Breeding cotton for resistance to major diseases and insects
- 1149 - Breeding and genetic studies of the sweet potato

2. Crop Breeding - Non-Federal

- 427 - Management of forest and farm game habitat; fish pond management
- 472 - Strawberry breeding
- 489 - Hybrid corn testing and seed increase
- 682 - Shallot breeding
- 710 - Breeding and testing of bush and pole beans
- 711 - Breeding of lima beans
- 714 - Sweet corn investigations
- 719 - Tomato breeding
- 730 - Breeding of new varieties of sugarcane
- 820 - Improvement of okra varieties for production in Louisiana

4. Engineering - Federal-grant

- 858 - The mechanization of controlling grass and weeds in cotton and improving the quality of harvested cotton (S-2)

## LOUISIANA (cont'd)

### 5. Entomology - Federal-grant

- 406 - Biology and control of insects affecting vegetable and fruit crops
- 412 - Investigating pests destructive to grain, soybeans and forage crops
- 447 - Sweet potato weevil studies in field and storage and of soil and foliage insects affecting sweet potato vines and roots
- 465 - A study of insects, mites and nematodes destructive to cotton and the development of economical means for controlling them
- 581 - A study of the destructive and beneficial insects of sugar cane with emphasis on the biology and control of the sugar cane borer, Diatraea saccharalis (F.)
- 606 - To conduct studies on the ecological factors responsible for destructive outbreaks of cotton insects
- 827 - Study of stored grain insects which infest and cause damage to grains in Louisiana
- 869 - A study of insect vectors of internal cork and of foliage feeding insects of sweet potato
- 887 - Biology and control of insects and mites attacking forage crops (S-25)
- 905 - Biology and control of insects, ticks and mites which attack livestock and poultry
- 977 - Mechanisms by which the boll weevil and other insects become resistant to insecticides (S-43)
- 1190 - Effect on boll weevil populations of introducing adverse genetic traits from the thurberia weevil into the gene pool

### 5. Entomology - Non-Federal

- 744 - The biology and control of arthropods affecting ornamentals
- 1138 - Biology, economic importance and control of arthropod pests of forest trees in Louisiana

## LOUISIANA (cont'd)

### 6. Plant Pathology - Federal-grant

- 511 - Cause and control of root, stem, leaf, and flower diseases of certain ornamental plants
- 559 - Soil-borne diseases of forage and cereal crops in Louisiana
- 760 - The control of cucumber anthracnose by means other than foliar fungicide treatment
- 766 - Investigations on sugarcane diseases, namely, mosaic, red rot, phytophthora rot, and nematode-plant disease complex
- 773 - Ratoon stunting disease of sugarcane
- 867 - A study of virus diseases of the sweet potato
- 910 - A study of certain virus diseases of sugarcane
- 931 - Control of sore-shin, the important seedling disease of cotton in Louisiana
- 1056 - "Hoja blanca" disease of rice, Oryzae sativa
- 1061 - Biology of plant-parasitic nemas (S-19)
- 1079 - Leaf spot and kernel diseases of rice
- 1146 - Nature and properties of plant viruses

### 6. Plant Pathology - Non-Federal

- 531 - Studies on disease of onion, shallots, and garlic and their control
- 731 - Control of fruit rots of strawberries
- 1047 - Response of Poria monticola Overh. and Polyporus versicolor L. to chemicals used in plant pathogen control
- 1216 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)

### 7. Soils - Federal-grant

- 837 - The effect of chemicals used in agriculture on the soil microflora

LOUISIANA (cont'd)

8. Veterinary Science - Federal-grant

1118 - Internal parasites of ruminants

9. Weeds - Federal-grant

1089 - A study of life cycles of Rottbellia exaltata and Amphibromus scabrivalvis and development of control measures for these weeds

1109 - Weed control in soybean production

9. Weeds - Non-Federal

729 - Weed control by chemicals

875 - Application of herbicides to control weed species in forest stands

971 - Fundamental studies on weed control

10. Miscellaneous - All Other - Federal-grant

1206 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

10. Miscellaneous - All Other - Non-Federal

609 - The ecology and management of woodcock in Louisiana



## MAINE

### 2. Crop Breeding - Federal-grant

- 17 - Breeding beans for disease resistance and adaptation
- 76 - The development of low, semi-highbush and highbush blueberry varieties adapted to Maine
- 162 - The effects of nutritional levels, of certain chemical characteristics, and of additives on the organoleptic quality of Maine-grown fruits and vegetables

### 5. Entomology - Federal-grant

- 11 - Insects affecting the blueberry
- 79 - Wood borers in forest products
- 101 - Biological and chemical control of potato infesting aphids in northeastern Maine
- 147 - Ecology and control of the pine leaf aphid, Pineus pinifoliae (Fitch), (Homoptera: Phylloxeridae)
- 183 - Experimental mosquito transmission of virus-induced avian neoplastic diseases
- 188 - Insects affecting the apple
- 193 - Control of black flies and mosquitoes in Maine
- 202 - The impact of DDT upon selected ecological systems within northern forests
- 203 - Arsenic studies with blueberries and potatoes
- 5001 - Susceptibility of various forest stand types to pine leaf aphid damage

### 6. Plant Pathology - Federal-grant

- 29 - Fungicides and some of their physiological effects on apple trees
- 55 - Virus diseases of deciduous tree fruits and their control (NE-14)
- 153 - Pathology of the wilt disease of trees in the northeast (NE-25)
- 192 - Biology and control of Verticillium wilt and other soil-borne potato pathogens

MAINE (cont'd)

196 - Biology and control of seed-borne and foliar diseases of potato

197 - Blueberry diseases

9. Weeds - Federal-grant

14 - Weed control in Maine crops

10. Miscellaneous - All Other - Federal-grant

H-205 - Chemical and non-chemical measures for the protection of  
perishable food commodities in marketing channels (NEM-33)

## MARYLAND

### 2. Crop Breeding - Federal-grant

- B-50 - Breeding for better dent corn
- B-67 - Varietal improvement in barley and oats
- B-76 - Red clover breeding investigations
- J-95 - Development of improved strains of Maryland tobacco resistant to diseases

### 2. Crop Breeding - Non-Federal

- B-43 - Soybean varietal improvement
- B-77 - Forage crop variety evaluation
- B-103 - Tobacco breeding, testing and quality evaluations of Maryland tobacco
- J-95 - Development of improved strains of Maryland tobacco resistant to disease
- Q81 - Cantaloupe breeding and selection with particular reference to quality and resistance to defoliation

### 5. Entomology - Federal-grant

- H-29-n - Chemical control of insect pests of sweet corn
- H-46-e - Evaluation of new insecticides on vegetable crops
- 67 - Pesticide residues in or on raw agricultural commodities (NE-36)
- H-81 - Utilization of the polyhedrosis virus for commercial control of the cabbage looper
- H-83 - Biology and control of loblolly pine cone insects in Maryland

### 5. Entomology - Non-Federal

- H-48 - Control of codling moth and careful observations on possibility of resistant strains
- H-82 - Chemosterilization of insects

## MARYLAND (cont'd)

- H-64 - An evaluation of the effectiveness of commercial insect control practices on canning crops
- H-71-d - Investigations of alfalfa insects, their biology and control
- H-72 - Physiology of insect reproduction
- H-73-a - Bionomics of Maryland mosquitoes
- H-74 - Biology and control of tobacco insects
- H-76 - Comparative morphology and physiology of insect blood cells
- H-77 - The susceptibility of the red-banded leaf roller, Argyrotaenia velutinana (Walker) to TDE
- H-78 - Metabolism of essential nutrients and insecticidal chemicals in sects
- H-80 - Classification of the neotropical mosquitoes of the subgenus Culex

## 6. Plant Pathology - Federal-grant

- J-91 - Fungicidal materials on cellular metabolism and their usefulness for the field control of vegetable diseases
- J-93 - Treatment of soil and underground parts of plants for the control of plant diseases
- J-97 - Physiology of plant parasitic nematodes and the plant-nematode interaction (NE-34)
- J-99 - The nature and control of diseases of ornamentals and turf grasses in Maryland
- J-100 - Nature and control of major field and storage diseases of sweet potatoes in Maryland
- J-101 - Forest tree seedlings and soil fungi relationships

MARYLAND (cont'd)

6. Plant Pathology - Non-Federal

- J-98 - Identification, characterization and control of certain viruses affecting economic plants in Maryland

9. Weeds - Federal-grant

- B-79 - Use of herbicides to control weeds in forages
- B-94 - The effects of physical characteristics of herbicides on efficiency and mode of action when used on corn and soybeans
- B-95 - Germination, development and competitiveness of crabgrass (*Digitaria* spp.) under varying environmental conditions (NE-42)
- B-98 - Physiological and biochemical mechanisms of selectivity of herbicides
- Q-77 - Efficacy and selectivity of chemical herbicides for controlling major weed species in truck crop production

9. Weeds - Non-Federal

- B-78 - The control of weeds in cultivated crops, turf and brush

10. Miscellaneous - All Other - Federal-grant

- L-79 - Chemical and non-chemical measures for the protection of  
-G perishable food commodities in marketing channels (NEM-33)

## MASSACHUSETTS

### 2. Crop Breeding - Federal-grant

- 11 - Breeding improved strains of orchard grass (Dactylis Glomerata L.) for Massachusetts and the northeast
- 86 - Breeding sweet corn, peppers and field tomatoes for Massachusetts
- 184 - Facilitating the marketing of seed through improved testing procedures (NEM-22)
- 188 - Carnation breeding for commercial varieties for New England

### 5. Entomology - Federal-grant

- 58 - Pesticide residues in or on raw agricultural commodities (NE-36)
- 119 - Insects affecting cranberries, blueberries and other ericaceous plants
- 139 - Forage crop insects in Massachusetts with particular emphasis on the alfalfa weevil, Hypera postica (Gyll)
- 166 - Biology and control of flies affecting livestock and domestic fowls
- 167 - Investigations of losses of honey bees from applications of pesticides and from bee diseases, and methods of reducing such losses
- 240 - Transformations of insecticides by plants .(NE-53)
- 248 - Biological and chemical studies of mite resistance to chemicals

### 6. Plant Pathology - Federal-grant

- M-S 1 - Etiology of maple tree decline in Massachusetts
- 110 - Pathology of wilt diseases (NE-25)
- 121 - Small fruit disease investigation
- 144 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)
- 231 - Transmission of apple mosaic and stem pitting viruses and their effects on physiological disorders of apples in storage



MASSACHUSETTS (cont'd)

9. Weeds - Federal-grant

- 73 - Forest stand improvement by the use of chemicals to kill inferior trees
- 116 - Weed control in cranberries

## MICHIGAN

### 2. Crop Breeding - Federal-grant

- 50 - The breeding of superior oat varieties

### 3. Economics - Federal-grant

- 957 - The relationship of persistent insecticide residues to the economics of Michigan dairy farmers and cash crop growers

### 5. Entomology - Federal-grant

- 2 - The comparative natural histories of three closely related beetles of the genus Agrilus
- 28 - A determination of the possibility of controlling certain economic insects by the application of chemicals upon or near the soil surface
- 927 - Interactions among pesticides and soil physical, chemical and microbiological properties (NC-19)
- 933 - Migration of aphids and noctuids (NC-67)
- 937 - Bionomics of the cereal leaf beetle (NC-73)
- 940 - The biochemical and ecological relationships of pesticides and the biological constituents of aquatic communities
- 942 - Investigations on autostability of the arthropod component in single species conifer ecosystems

### 6. Plant Pathology - Federal-grant

- 106 - Physiology of parasitism by plant pathogens
- 820 - Virus diseases affecting peach and maintenance of virus-free standard peach varieties
- 919 - The interactions of viruses in plant tissues
- 920 - Virus diseases of potato and other plants
- 921 - Tree fruit virus determinations
- 922 - Physiology of parasitism and disease development in plants
- 931 - Nature of inhibition and lysis of plant pathogenic fungi by natural soil

## MICHIGAN (cont'd)

- 953 - Mechanisms of survival of root-infecting fungi in soil (NC-70)
- 962 - Fruit disease control by chemicals and other means

### 8. Veterinary Science - Federal-grant

- 848 - Toxic effects of urea in cattle rations
- 850 - Gastrointestinal parasities of ruminants
- 964 - Pathologic effects of biologically active chemicals used in the environment. The toxicity of nitrates and related compounds

### 9. Weeds - Federal-grant

- 123 - The role and fate of herbicides, antibiotics, growth-regulating substances and other compounds in different soil types
- 908 - Fundamental factors in cultural and chemical weed control, weed competition, and weed life cycles
- 909 - Chemical weed control in horticultural crops
- 910 - Engineering requirements for the application of herbicides
- 959 - An evaluation of widely used herbicides on aquatic plants, fish and fish-food organisms

### 10. Miscellaneous - All Other - Federal-grant

- 967 - Trace levels of pesticide residues in agricultural commodities in marketing channels (NCM-37)
- 968 - Trace levels of pesticide residues in agricultural commodities in marketing channels (NCM-37)
- 970 - Trace levels of pesticide residues in agricultural commodities in marketing channels (NCM-37)

MINNESOTA

2. Crop Breeding - Federal-grant

- 1311 - Corn improvement
- 1315 - Varietal improvement in smooth brome and other forage grasses.--1. Selection and breeding of brome grass. 2. Selection and breeding of other forage grasses. 3. Varietal testing of forage grasses
- 1326 - Alfalfa improvement for Minnesota
- 1337 - Barley improvement and genetics
- 2101 - Potato breeding
- 2120 - Growing and handling ornamentals
- 2121 - The establishment and maintenance of lawns in Minnesota
- 2126 - Breeding disease resistant vegetables

2. Crop Breeding - Non-Federal

- 1305 - Spring wheat
- 1306 - Winter wheat
- 1307 - Varietal improvement in oats
- 1308 - Flax improvement
- 1316 - Varietal improvement in red clover and other legumes
- 1329 - Selection and breeding of Kentucky bluegrass
- 1330 - Crop improvement and weed control at Rosemount
- 1334 - Soybean breeding and testing
- 2102 - Breeding and improvement of garden flowers and roses
- 2106 - Fruit breeding and improvement
- 2122 - Fruit variety studies
- 2123 - Orchard and small fruit management studies

MINNESOTA (cont'd)

- 2130 - Cultural and physiological studies on vegetable crops and potatoes with special reference to factors affecting yields and quality

4. Engineering - Federal-grant

- 1208 - Design and development of equipment and methods for weed control

5. Entomology - Federal-grant

- 1705 - Ecology, life history and control of insects attacking vegetables in Minnesota
- 1706 - Ecology and control of insect pests of forest and shade trees
- 1708 - Physiological studies on insects
- 1721 - A study of methods of estimating insect abundance and relating population density to insect damage
- 1722 - Modes of action of insecticides
- 1723 - Insects affecting seed production of forage legumes and grasses
- 1726 - Causes of insect outbreaks. --1. Factors affecting populations of European corn borer (NC-20)
- 1730 - Effect of the association of molds and insects on the keeping quality of stored grain
- 1740 - Studies on physiology, morphology and culture of micro-organisms and the insect tissues with which they are associated
- 1745 - The biology and control of insects which are related to plant diseases
- 1747 - Resistance of plants to insect attack
- 1751 - Taxonomy and biological investigations of bird lice
- 1752 - Biological studies on systematic problems in Arthropoda
- 1753 - Ecology of the corn rootworms

5. Entomology - Non-Federal

- 1701 - Insect collection
- 1707 - Insect nutrition

MINNESOTA (cont'd)

1714 - The biology of the European corn borer in Minnesota

1727 - A study of insect control on cattle

6. Plant Pathology - Federal-grant

2209 - Rusts of cereals--8. physiologic specialization in cereal rusts

2214 - The nature and variability of plant disease resistance--1.  
wheat and other small grains

2220 - Cause and control of biological and chemical deterioration of  
agricultural products in storage--1. soybeans, corn, and  
cereal grains

2226 - Physiology of plant pathogens and host-parasite relationships

2228 - Nematodes in relation to plant diseases

2231 - The biology of microorganisms causing diseases of ornamentals

2234 - Deterioration of wood and wood products

2241 - Diseases of forage legumes

2244 - Diseases of fruit crops

2245 - Diseases of canning crops

2247 - Diseases of vegetables other than potatoes and canning crops

2252 - Ecology of wood decay  
-S

2253 - Mechanisms of survival of root-infecting fungi in soil (NC-70)

6. Plant Pathology - Non-Federal

2203 - Dendropathological work

2208 - Plant disease survey

2229 - Diseases of soybean

2233 - The development of disease-resistant varieties of field crops  
at Rosemount

2236 - Translocation in fungi

2237 - Corn diseases



MINNESOTA (cont'd)

- 2238 - Diseases of barley
- 2239 - Oat diseases
- 2240 - Diseases of grasses
- 2242 - Development of disease resistant wheats
- 2243 - Diseases of flax
- 2246 - Potato diseases
- 2248 - Minnesota fungi
- 2251 - Mutual relations between plant roots and soil organisms
- 2254 - Fungus diseases of sugar beets

7. Soils - Federal-grant

- 2534 - The relationship of the sorption and desorption of pesticide residues in soils to their persistence or elimination

9. Weeds - Federal-grant

- 1328 - Investigations of principles and methods of weed control in crops and pastures
- 1332 - The influence of environment on herbicides in plants and soils
- 1335 - Effect of environment on the growth, development and control of weeds (NC-61)
- 1918 - Ecology and control of brush and other forest vegetation
- 2125 - Weed control in vegetable crops
- 2235 - Factors affecting the phytotoxicity of herbicides and the nature of their action
- 2528 - Soil factors influencing the fate and activity of selected herbicides in Minnesota soils (NC-19)

9. Weeds - Non-Federal

- 1335 - Effect of environment on weed growth and development
- 2531 - Evaluation of nutrient and herbicide interactions as they affect the growth and quality of soybeans

2. Crop Breeding - Federal-grant

- 432 - Grass investigations and improvement
- 445 - The establishment and management of southern turfgrasses
- 447 - Red clover investigations and improvement
- 468 - Development of fundamental information and procedures for breeding crimson clover, Trifolium incarnatum L.
- 1132 - Development of improved management methods for hardwood and pine-hardwood stands
- 1333 - Breeding, selecting and variety testing of cucumbers
- 1334 - Breeding and variety testing of tomatoes
- 1336 - Breeding and variety testing of sweet corn
- 1354 - Problems in pecan production: Disease control and other factors related to fruit set and quality

2. Crop Breeding - Non-Federal

- SAB - Study pears for disease resistance  
-15
- SAE - Rehabilitation of depleted forest  
-18
- SS-9 - Strains test with brome grass, orchard grass, ryegrass, rescue grass, and harding grass
- SS-45 - Varietal comparisons of legumes and clovers
- SS-46 - Summer pasture grasses and legumes varietal trials
- SUB-1 - Breeding castorbeans for the Mississippi Delta
- SUB-2 - Breeding sesame for the Mississippi Delta
- SUCJ - The transfer of blight resistance to upland cotton  
-I
- SUCJ - The transfer of wilt and root-knot nematode resistance to upland cotton  
-II

MISSISSIPPI (cont'd)

- SUDP - Alfalfa diseases  
-I
- SUDP - Diseases of pasture legumes and grasses  
-II
- SUG - Main hybrid corn performance tests  
-1
- SUG - Breeding improved inbred lines of corn  
-2
- SUG - Uniform testing of oat varieties  
-8
- SUG - Breeding improved varieties of oats  
-9
- SUG - Oat species hybridization  
-10
- SUG - Uniform testing of rye and wheat varieties  
-12
- SUG - Uniform barley testing  
-13
- SUH - Tree fruit adaptation studies  
-5
- SUK - Rice variety tests  
-1
- SUK - Rice breeding  
-4
- SUP - Red clover improvement  
-4
- SUS - Breeding and evaluating new and improved varieties of soybeans  
-1
- SX - Sorgo varieties  
-21
- SX - Cotton varieties  
-36

## MISSISSIPPI (cont'd)

- SZ - Selecting and breeding tomatoes for better yield, quality,  
-1 and disease resistance
- SZ - Control of blackrot in cabbage and related species by  
-2 breeding for resistance and the use of bacteriacides
- SZ - The development of better adapted varieties of bush snap  
-15 beans for the Mississippi fresh market
- SZ - Breeding and variety testing of sweet corn  
-17
- SZ - Breeding turnips for resistance to white leaf spot disease  
-23
- SZ - Cantaloups and watermelon varietal and cultural studies  
-24
- 404 - Development and testing of superior corn hybrid combinations

### 3. Economics - Federal-grant

- 238 - An economic appraisal of pest control practices for  
agricultural products in marketing channels

### 4. Engineering - Federal-grant

- 2569b - Development and evaluation of new principles of applying  
agricultural chemicals in cotton (S-2)

### 4. Engineering - Non-Federal

- 301 - Development of new concepts in aerial applicators for use in  
agriculture
- 303 - Development of machinery for chemical weed control
- SUMI - A comparison of boom and air delivery sprayers for cotton  
-I insect control
- SUMI - A study of volume requirements of boom sprayers for cotton  
-II insect control
- SUMI - Development of machines and methods for cotton insect control  
-VIII
- SUMW - Machines and methods for weed control  
-I

## MISSISSIPPI (cont'd)

### 5. Entomology - Federal-grant

- 739 - On-the-farm practices which may contribute to the occurrence of pesticide residues in milk
- 1032 - The biology, ecology, and importance of the Nantucket pine tip moth, Rhyacionia frustrans (Comst.) in Mississippi (S-36)
- 1033 - A study of insecticides, with special reference to factors governing effectiveness such as physical characteristics, weather and distribution over plants
- 1035 - Biology and control of the Heliothis complex on cotton
- 1036 - Develop a chemical and cultural control program for cotton pests
- 1037 - The biology and control of arthropod pests of livestock and domestic animals
- 1038 - Biology and control of the cowpea curculio and other cowpea insects
- 1039 - Value of control measure for the pecan nut casebearer Acrobasis caryae Grote and the hickory shuckworm Laspeyresia caryana (Fitch)
- 1041 - Control of the imported fire ant
- 1043 - Control of subterranean termites and other wood damaging insects
- 1044 - Control of soil insects attacking sweet potatoes in the field
- 1045 - The use of pathogens for insect control
- 1068 - Mechanisms by which arthropods become resistant to chemicals and means for coping with the problem (S-43)
- 8-240 - Evaluate the diapause boll weevil control concept under  
-1097 southeastern cotton production practices

### 5. Entomology - Non-Federal

- 1002 - Insects affecting growing rice
- 1003 - The control of flood and brackish water mosquitoes and a study of factors responsible for population explosions
- 1302 - Advanced studies on chemical control of the corn earworm on  
(SK-10) sweet corn



## MISSISSIPPI (cont'd)

- SAB - Parasite control on dairy animals  
-25
- SAB - Insect and disease control of peaches  
-33
- SS - Insecticidal control of soil insects attacking corn  
-60c
- SUI - Survey of abundance and damage caused by the boll weevil and  
-1 other cotton pests as an aid to the proper distribution of  
insecticides
- SUI - The effects of selected overwintered boll weevil populations  
-2 and their progeny on yield and quality of cotton
- SUI - The effects of selected environmental factors on the induction  
-3 of diapause in the boll weevil
- SUI - Large plot boll weevil control with dusts and sprays applied  
-4 with tractor-mounted equipment
- SUI - Large field boll weevil control tests with sprays and dusts  
-5 with airplane
- SUI - The effects of temperature on the toxicity of insecticides to  
-5 the boll weevil
- SUI - Systemic insecticides for control of cotton pests  
-6
- SUI - Studies of alternate host plants of the bollworm and their  
-7 relation to infestations in nearby cotton
- SUI - Biology and control of bollworms (Heliothis spp.)  
-8
- SUI - Insecticide tests for the control of several species of thrips  
-9 attacking cotton
- SUI - Biology and control of fleahoppers and plant bugs (Miridae)  
-10 attacking cotton with special emphasis on the tarnished plant  
bug
- SUI - Toxicity to spider mites of new chemicals and new formulations  
-12
- SUI - Toxicity to beneficial, parasitic and predaceous insects of  
-13 various chemicals and formulations used in cotton insect  
control



MISSISSIPPI (cont'd)

- SUI - Life history and bionomics of the boll weevil at Stoneville,  
-14 Mississippi
- SUIC - Tolerance of genetically different cotton plants to insects  
-1
- SUIG - Studies of southwestern and European corn borers with emphasis  
-II on life and seasonal history and timing of insecticide  
applications for control
- SUIK - Studies of insects attacking rice  
-I
- SUIS - Life history and control of stink bug on soybeans in the  
-II Mississippi delta
- SUIY - Effects of insecticides on physiology of cotton plant and insect  
-II populations on the plants
- SUT - Biology and control of horse flies and deer flies as they relate  
-1 to pests of animals and vectors of disease
- SUT - Investigations of control measures for the horn fly and stable  
-2 fly on livestock
- SUT - Investigation of methods and materials for the control of house  
-4 flies and blow flies
- SUT - Investigation of methods and materials for the control of grubs  
-5 and bots affecting livestock
- SUT - Investigations of methods and materials for the control of lice  
-6 affecting livestock
- SUT - Abundance, distribution and control of miscellaneous insects,  
-7 ticks and mites affecting livestock (poultry lice, mites and  
ticks; cattle ticks; lice and mites of sheep and swine, and  
mosquitoes)
- SUTL - A study on insect transmission of anaplasmosis  
-II
- SUYI - Effects of common cotton insecticides on the metabolism of the  
-III cotton plant
- SZ - Control of soil insects attacking sweet potatoes  
-11

## MISSISSIPPI (cont'd)

### 6. Plant Pathology - Federal-grant

- 1435 - Investigation of the seedling diseases of cotton and their control under Mississippi conditions
- 1436 - Development of fusarium, verticillium and root-knot resistant varieties of cotton and methods for controlling boll rots
- 1438 - Investigation of the diseases of fruit crops and their control
- 1439 - Investigation of pepper diseases and their control under Mississippi conditions
- 1440 - Investigation of cowpea diseases, resistant factors, and the production of resistant varieties
- 1444 - Investigations on forage crop diseases and their control
- 1445 - Investigations of nematode and virus diseases of forage crops
- 1451 - Investigation of virus inactivators
- 1452 - Diseases of ornamental plants and their control in Mississippi
- 1455 - The significance of site in the occurrence of needle dieback (needle cast) of loblolly pine

### 6. Plant Pathology - Non-Federal

- 1408 - Relation of seed-borne fungi to boll rots of cotton
- SUJ - Cotton wilt disease studies  
-1
- SUJC - Dates of planting study  
-I
- SUJC - Responses of cottonseed and seedlings to low temperature and  
Y-I deterioration
- SUJY - Control of cotton seedling diseases  
M-I
- SUJY - Evaluation of causes and methods of controlling boll rot losses  
M-I
- SUJY - Chemical control of cotton diseases other than seedling diseases  
M-II

## MISSISSIPPI (cont'd)

SUS - Soybean diseases

-5

SZ - The use of antiviral agents in controlling plant virus  
-3 diseases in pepper

SZ - Chemical control of foliar and pod diseases of the bush lima  
-8 bean

SZ- - Chemical control of foliage diseases on the tomato and methods  
12 of fungicidal application

SZ- - Seed, plant-part and plant treatment studies  
13

### 7. Soils - Federal-grant

569 - The disposition of pesticides in the soil (S-62)

### 8. Veterinary Science - Federal-grant

2132 - Investigation of the interrelationship of type of pasture and  
internal parasitism in the production of beef cattle in  
Mississippi

### 9. Weeds - Federal-grant

1446 - Weed and brush control in pasture and non-crop land

1447 - The development of principles and practices of weed control  
in cotton, soybeans, and other row crops

1453 - The effect of herbicides upon the quality, metabolism and  
morphology of weeds and crops as influenced by plant life  
cycles

1454 - Determination of herbicidal residues and the fate of herbi-  
cides in certain agronomic crops in Mississippi

1466 - The effects of selected herbicides upon the activities of  
certain plant enzymes (S-18)

2538 - Basic investigations of nutsedge (Cyperus rotundus L.)

2568 - Mode of detoxification of herbicides in soils (S-18)

### 9. Weeds - Non-Federal

1405 - Weed control investigations in cereal crops, vegetable crops,  
and aquatic weeds

MISSISSIPPI (cont'd)

- 1407 - The use of herbicides for weed control in cotton without cultivation other than seedbed preparation
- R11. - Relationships between herbicidal efficiency and site factors  
2.5
- R24. - Use of silvicides  
3
- SAB - Herbicides for weed control in cotton  
28
- SS - The use of herbicides for weed control in cotton without  
-18 cultivation other than seedbed preparation
- SS - The use of herbicides for weed control in corn without  
-20 cultivation other than seedbed preparation
- SS - The use of herbicides for weed control in soybeans without  
-21 cultivation other than seedbed preparation
- SS - The use of herbicides for weed control in sorghum without  
-24 cultivation other than seedbed preparation
- SUFWJ - The influence of summer and winter fallow on soil properties,  
-I weed control, plant diseases, and crop production
- SUKW - Herbicides for the control of grassy weeds in rice  
-I
- SUW - Johnsongrass control investigations  
-6
- SUW - Weed investigations in cotton  
-8
- SUW - Primary evaluation of herbicides  
-11
- SUWS - Weed control investigations in soybeans  
-I
- SV - The use of herbicides for weed control in cotton without  
-102 cultivation other than seedbed preparation
- SV - The use of herbicides for weed control in corn without  
-103 cultivation other than seedbed preparation

## MISSISSIPPI (cont'd)

- SV - The use of herbicides for weed control in soybeans without  
-105 cultivation other than seedbed preparation
- SX - Chemical weed control in cotton  
-45
- SX - Chemical weed control in corn  
-46
- SX - Chemical weed control in soybeans  
-47
- SZ - Chemical weed control study with tomatoes, bell peppers,  
-32 sweet corn, and bush snap beans

### 10. Miscellaneous - All Other - Federal-grant

- 766 - Reduction or elimination in commercial channels of adverse  
effects of pesticide residues on food and feed products  
(SM-32)
- 1266 - Reduction or elimination in commercial channels of adverse  
effects of pesticide residues on food and feed products  
(SM-32)

### 10. Miscellaneous - All Other - Non-Federal

- SS - Row spacing and chemical weed control on soybeans  
-35
- SUBYWM - Development of improved agronomic practices of producing  
-1 sesame in the Mississippi Delta
- SUBYWM - Development of improved agronomic practices of producing  
-II castorbeans in the Mississippi Delta



2. Crop Breeding - Federal-grant

- 49 - Improvement of the Missouri soybean crop
- 85 - Breeding hybrid corn for Missouri
- 90 - Breeding and genetics of winter barley
- 128 - The breeding and evaluation of improved vegetable varieties
- 160 - Cotton improvement
- 202 - Breeding and genetics of soft red winter wheat
- 203 - Breeding and genetics of oats
- 221 - Breeding birdsfoot trefoil and other special purpose legumes
- 466 - Greenhouse flower crop production
- 492 - Introducing the sugar beet crop to Missouri agriculture

2. Crop Breeding - Non-Federal

- 491 - Evaluation of cotton varieties and new strains

5. Entomology - Federal-grant

- 31 - Investigations and control of the codling moth and other fruit, vegetable and ornamental plant insects
- 46 - Biology and control of arthropod pests of livestock
- 74 - Further studies on the influence of the different elements and plant nutrients on the well-being and fecundity of the house cricket and other insects
- 102 - Insect pests of small grains
- 214 - Insects of cotton in the cotton growing section of Missouri
- 269 - Insect pests of corn, sorghum, and stored grains
- 270 - Factors influencing European corn borer populations (NC-20)
- 283 - Investigations of plant and animal tolerance to soil insecticides and their accumulation and decomposition in soils (NC-19)



## MISSOURI (cont'd)

- 369 - The biology and control of stink bugs, soil insects, grasshoppers, and occasional pests of legumes and grasses
- 435 - Factors influencing the distribution and abundance of grasshoppers (NC-52)
- 551 - Migration of aphids and noctuids (NC-67)

### 5. Entomology - Non-Federal

- 36 - Entomology research museum
- 532 - Biology and control of corn rootworms in northern Missouri
- 568 - Midges, mosquitoes, and other arthropods associated with oxidation lagoons

### 6. Plant Pathology - Federal-grant

- 27 - The study of systemic antimicrobial agents and factors which influence their effectiveness in controlling bacterial diseases of horticultural crops
- 52 - Investigations of oak wilt
- 194 - Grape disease control and pesticide phytotoxicity
- 232 - Pesticides for disease control and phytotoxic effects of pesticides and pesticide combinations on apples
- 312 - Factors affecting the population dynamics and distribution of soil inhabiting and plant parasitic nematodes of Missouri
- 322 - Diseases of cotton
- 420 - Evaluation of introductions of Lotus corniculatus for resistance to root and crown rot (NC-7)
- 469 - Diseases of field crops in Missouri - with special emphasis on corn, forage crops, small grains and soybeans
- 501 - Chemistry and physiology of healthy and diseased plant tissues
- 540 - Fomes annosus root- and butt-rot of Pinus echinata in Missouri

### 6. Plant Pathology - Non-Federal

- 401 - The identification and importance of certain forest and shade tree diseases in Missouri

8. Veterinary Science - Federal-grant

108 - Internal parasites of ruminants

495 - A study of the life cycle of Histomonas meleagridis

9. Weeds - Federal-grant

146 - Control of weeds in horticultural crops

153 - Equipment and procedures for control of weeds and brush

156 - The control of weeds

332 - Research in efficient weed control and crop defoliation in cotton production

473 - Herbicide residue methods

479 - The nature and extent of weed competition (NC-61)

548 - Control of weeds in forages and grazing land

10. Miscellaneous - All Other - Federal-grant

573 - Trace levels of pesticide residues in agricultural commodities in marketing channels (NCM-37)

2. Crop Breeding - Federal-grant

- 916 - Development by testing and selection of varieties of sugar beets resistant to Aphanomyces, Rhizoctonia, and Fusarium root rots
- 1083 - The improvement of tall, intermediate, and pubescent wheatgrass by intergeneric crossing with wheat
- 1149 Breeding and improvement of potatoes

2. Crop Breeding - Non-Federal

- 928 - Development of new varieties of spring wheat and the testing of these and introduced varieties for production in Montana

5. Entomology - Federal-grant

- 1101 - The ecology, economic significance and control of cattle grubs in Montana
- 1116 - Insect exoskeleton composition: lipids
- 1138 - Factors influencing changes in grasshopper population numbers (W-37)

5. Entomology - Non-Federal

- 925 - Cattle lice in Montana

6. Plant Pathology - Federal-grant

- 975 - Virus diseases of cereals
- 981 - Nature of the influence of crop residues on fungus-induced root disease of sugar beets caused by Aphanomyces cochlioides Drechs (W-38)
- 1127 - Nature of the influence of various cultural practices on the fungi causing foot and root rots of cereals
- 1180 - Factors influencing specific infection type development of Puccinia striiformis (West.) on Triticum aestivum L.
- 1184 - Identification, etiology, and control of virus diseases of deciduous fruit trees (W-64)

8. Veterinary Science - Federal-grant

1080 - Chemoprophylaxis of nematode infectations in sheet (W-35)

9. Weeds - Federal-grant

881 - The control of annual and biennial weeds in field crops

924 - Factors affecting sagebrush (Artemisia tridentata var. tridentata Nutt.) seed germination (W-25)

1185 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

1185 - Fundamental biochemical and biophysical mechanisms involved in herbicidal action (W-52)

2. Crop breeding - Federal-grant

- 12-5 - Developing and applying principles of alfalfa improvement
- 12-9 - A study of the adaptation, improvement, and culture of grain and forage sorghums
- 12-28 - Sweetclover improvement
- 12-55 - Breed and evaluate wheat varieties for Nebraska
- 20-2 - The development of new varieties of potatoes with superior disease resistance, yield and quality
- 20-3 - Bean breeding and genetics
- 20-6 - Improvement of tomatoes, sweet potatoes, cabbage, and broccoli
- 20-10 - Breeding potato parental lines for resistance to scab, heat and/or drouth (NC-35)

2. Crop breeding - Non-Federal

- 12-28 - Investigations for improvement of Safflower and development of other potential crops for western Nebraska
- 12-59 - Investigations for developing adapted castorbeans varieties and hybrids and means of castorbean disease control in Nebraska

5. Entomology - Federal-grant

- 17-1 - Biology, ecology and control of the stable fly
- 17-2 - Arthropod transmission of plant disease pathogens
- 17-3 - Sweetclover weevil investigations
- 17-4 - Annual census of European corn borer populations (NC-20)
- 17-5 - The biology, ecology and control of the spotted alfalfa aphid (NC-38)
- 17-7 - The effects of visible spectrum irradiation on growth and development in several species of insects
- 17-8 - Investigations of field bean insects with emphasis on the western bean cutworm, Loxagrotis albicosta



## NEBRASKA (cont'd)

- 17-10 - Biology and control of insect pests affecting livestock and  
man
- 17-11 - Systematics of insects and mites of the Great Plains with  
special reference to Nebraska
- 17-13 - Factors influencing the distribution and abundance of grass-  
hoppers in Nebraska (NC-52)
- 17-14 - The biology, ecology and control of the European corn borer  
Pyrausta nubilalis (Hbn.) (NC-20)
- 17-15 - Biology, ecology and control of corn rootworms
- 17-16 - Field and Laboratory investigations of insecticides
- 17-17 - Biology, ecology and economics of Noctuidae in Nebraska
- ES-461 - Maintenance of marketability of stored grain through control  
(607) of insects and rodents

### 6. Plant Pathology - Federal-grant

- 21-2 - The etiology and control of soil-borne diseases of sugar beets
- 21-3 - Plant viruses, the diseases of plants they cause and their  
control
- 21-5 - Fundamental studies on root diseases of plants
- 21-7 - Nematode diseases of plants in Nebraska and their control
- 21-8 - Physiologic studies of obligate parasitism, with special  
emphasis on diseases caused by rust
- 21-13 - Mechanisms of survival of root-infecting fungi in soil (NC-70)

### 6. Plant Pathology - Non-Federal

- 21-1 - Plant disease survey
- 21-4 - Disease of new and special crops in Nebraska and their control
- 21-6 - Diseases of forest and shade trees in nurseries, plantings,  
and native stands
- 21-10 - Plant pathology outstate testing
- 21-11 - Investigations of nutrition and physiology of nematode diseases  
through the use of plant tissue culture



NEBRASKA (cont'd)

8. Veterinary Science - Federal-grant

- 14-4 - Parasitology of Nebraska livestock
- 14-6 - Disease control through repopulation of farm herds with disease-free swine
- 14-9 - Epizootiology of specific pathogen free (S PF) pigs on controlled farms (NC-62)

9. Weeds - Federal-grant

- 12-7 - Chemical and cultural control of weeds
- 12-33 - Pasture weed control
- 12-56 - Fate of herbicides in soils and Opuntia spp (CRF-1)
- 43-2 - Development of weed control principles and methods for western Nebraska agriculture
- 43-15 - Principles and methods for control of downy brome (Bromus tectorum) and other annual bromes

10. Miscellaneous - All Other - Federal-grant

- 40-3 - Ecological studies of crop production in western Nebraska
- 44-1 - Improvement of safflower by development of better cultural methods and superior varieties

## NEVADA

### 2. Crop Breeding - Non-Federal

432 - Alfalfa production, breeding, disease, insect and quality investigations

491 - Production problems in horticulture

### 5. Entomology - Federal-grant

437 - Biology and control of the harvester ant, Pogonomyrmex occidentalis (Cresson) on Nevada rangelands

### 5. Entomology - Non-Federal

493 - Investigations of economic insects of Nevada

### 6. Plant Pathology - Federal-grant

433 - The interrelation of nematodes and other pathogens in plant disease complexes (W-56)

435 - The etiology and control of soilborne diseases of cotton in Nevada

436 - Nature of the influence of crop residues on Phymatotrichum root rot of alfalfa (W-38)

### 7. Soils - Federal-grant

439 - Biodegradation of herbicides in treated soils for establishment of range forage plants

### 8. Veterinary - Federal-grant

602 - Pathogenesis of nematode infections of sheep (W-35)

603 - Pathogenesis and control of trematode infections in sheep on irrigated pastures

### 9. Weeds - Federal-grant

402 - Conservation of ground water and increased forage production through eradication of undesirable vegetation, seeding and grazing management

429 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

434 - Control of Russian knapweed (Centaurea repens L.)

NEVADA (cont'd)

9. Weeds - Non-Federal

- 490 - Improvement and management of the community pastures of the Pershing Co. Water Conservation District near Battle Mountain, Nevada
- 494 - Establishment of seeded perennial grasses in relation to chemical  
-a and mechanical control of downy brome (Bromus tectorum) and other herbaceous weeds and cultural treatments on rangelands
- 494 - Chemical control of low sagebrush (Artemisia arbuscula and A.  
-b longiloba) and big sagebrush (A. tridentata) and response of native and exotic species following control

10. Miscellaneous - All Other - Federal-grant

- 404 - Causes of brush encroachment into crested wheatgrass range pastures

## NEW HAMPSHIRE

### 2. Crop Breeding - Federal-grant

- 39 - Cultural studies with horticultural crops
- 54 - Breeding better vegetables for New Hampshire
- 56 - The development, improvement and maintenance of blueberry fields
- 74 - Breeding improved fruits for New Hampshire
- 105 - The improvement of white clover
- 168 - Genetics and breeding problems in Syringa and Pelargonium

### 2. Crop Breeding - Non-Federal

- S-38- Evaluation of nuts and breeding varieties for New Hampshire
- S-75- Turf grasses and turf

### 5. Entomology - Federal-grant

- 122 - Testing new organic pesticides under New Hampshire conditions
- 148 - A study of Aphaereta pallipes (Say) (Braconidae) and its relation to Musca autumnalis DeGeer and M. domestica Linn

### 5. Entomology - Non-Federal

- S-80- Distribution and biological studies of New Hampshire insects

### 6. Plant Pathology - Federal-grant

- 57 - Fungicide investigations
- 119 - Virus diseases of deciduous tree fruits and their control (NE-14)
- 145 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)
- 164 - Root and crown diseases of ladino white clover and other forage legumes (NE-45)
- 171 - Phospholipid metabolism of fungi and algae

### 6. Plant Pathology - Non-Federal

- S-46- Plant disease investigations

NEW HAMPSHIRE (cont'd)

8. Veterinary Science - Non-Federal

S-84 - Control of avian coccidiosis

9. Weeds - Federal-grant

159 - Weed control in horticultural and agronomic crops

2. Crop Breeding - Federal-grant

- 121 - Corn breeding
- 122 - Factors affecting corn yield
- 131 - Breeding winter small grains for the mid-Atlantic area
- 145 - Turfgrass breeding
- 177 - Apple breeding
- 179 - Pear breeding
- 181 - Strawberry breeding
- 182 - Blueberry breeding
- 217 - Asparagus breeding
- 229 - Holly breeding
- 235 - Pyracantha breeding

2. Crop Breeding - Non-Federal

- 124 - Soybean culture and breeding
- 357 - The evaluation of potato varieties and cultural practices for horticultural characteristics, yield, market, table, and processing qualities

5. Entomology - Federal-grant

- 328 - Transformations of insecticides by plants (NE-53)
- 410 - Biology and control of structural, household and stored product insects
- 422 - Life history, ecology and control of the alfalfa weevil, Hypera postica, in New Jersey
- 423 - Blueberry insect investigations
- 424 - Fundamental physiological studies of mechanisms of insecticidal actions
- 426 - Mosquitoes in relation to agricultural production and veterinary science



NEW JERSEY (cont'd)

- 427 - The biology and control of phytophagous mites attacking ornamental plants
- 431 - Chemical research on insecticides and their formulations
- 432 - Evaluation of current data and needed research to obtain clearance for safe, effective chemicals for minor uses on agricultural products (IR-4)
- 478 - Pesticide residues in or on raw agricultural commodities (NE-36)

5. Entomology - Non-Federal

- 358 - Control of potato pests
- 401 - Coordination of mosquito control in New Jersey through regulation, education and service
- 402 - Mosquito investigations - research and development
- 404 - Investigations of insects and other animals attacking tree fruits
- 405 - Vegetable insect investigations
- 407 - Investigations of insects and other arthropods attacking ornamental plants
- 408 - Grassland insect investigations
- 409 - Insects (other than mosquitoes) affecting man and animals
- 411 - Cranberry insect investigations
- 412 - Investigations on chemical and insect contamination of fresh market and processing crops
- 413 - Insect investigations of strawberries and brambles
- 416 - Morphological investigations of the insect nervous system
- 438 - Fundamental studies of insect physiology and insecticide action
- 440 - Physiology of resistance to insecticides
- 443 - Insect repellents and substances interfering with development
- 444 - Interrelation of housefly populations and resistance

6. Plant Pathology - Federal-grant

- 352 - Factors involved in susceptibility to and infection of peach by Fusicoccum amygdali (canker) and X. pruni, (bacterial spot), and ways of controlling these diseases
- 361 - Effects of environmental factors and dip treatments on some wheat potato diseases
- 371 - Blueberry diseases and their control
- 372 - Cranberry diseases and their control
- 374 - Preservation of the quality of freshly harvested produce through the control of decay-producing organisms
- 377 - Pathogen, host and microflora interactions associated with alfalfa root rot complex
- 380 - Diseases of strawberries, grapes and can fruits
- 381 - Pathology of the wilt disease of trees in the northeast (NE-25)
- 384 - Biology and control of asparagus root rot and rust pathogens
- 387 - Pathogen, host and microflora interactions associated with the root rot complex of forage legumes (NE-45)
- 425 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)

6. Plant Pathology - Non-Federal

- 304 - Ecology of predaceous fungi
- 305 - Concentration and characterization of nemin
- 306 - Time-lapse cinephotomicrographic study of trap formation and nematode capture by predaceous fungi
- 351 - Tree fruit diseases and their control
- 362 - Etiology and control of tomato diseases
- 367 - Studies on diseases of ornamental plants
- 385 - Diseases of field crops
- 386 - Serological identification of plant viruses, diagnosis of plant virus diseases, and determination of host-virus relationships

NEW JERSEY (cont'd)

415 - Evaluation of nematocides and potential nematocidal chemicals, their residues in plants, and their diffusion properties in the soil

439 - Selective chemical inhibitors of embryonation

9. Weeds - Federal-grant

142 - Fate of herbicides in plants and soils

143 - Factors which influence seed germination, growth, and initiation of reproductive structures of horsenettle and their ultimate effect on cultural and chemical control measures (NE-42)

144 - Biology and control of aquatic weeds

147 - Biology and control of terrestrial weeds

148 - Herbicidal formulations and carriers

9. Weeds - Non-Federal

138 - Chemicals related to turfgrass production

141 - Weed control in field and horticultural crops

146 - Weed control in asparagus

10. Miscellaneous - All Other - Federal-grant

412 - Chemical and non-chemical measures for the protection of perishable food commodities in marketing channels (NEM-33)

10. Miscellaneous - All Other - Non-Federal

477 - Research in methods for testing economic poisons, feeds, fertilizers and liming materials

805 - A study of the influence of pesticides, fertilizers, and other agents on the flavor of fresh, canned, and frozen foods

## NEW MEXICO

### 1. Animal Science - Federal-grant

- 151 - Effect of increased body metabolism on the excretion rate of pesticide from dairy cows

### 2. Crop Breeding - Federal-grant

- 12 - Breeding and evaluation of strains and varieties of upland cotton for New Mexico
- 18 - Breeding pecans for New Mexico conditions and determining adapted varieties
- 21 - Development of improved chile (Capsicum frutescens) strains and hybrids for New Mexico
- 56 - The evaluation of clonal apple rootstocks for the production of dwarf or semi-dwarf trees and for resistance to the wooly aphid insect

### 2. Crop Breeding - Non-Federal

- 3 - Breeding of disease and insect resistant alfalfa with agronomic traits superior to existing varieties
- 158 - Adaptability and improvement of chile
- 202 - Evaluation of cotton varieties and strains for the Pecos Valley of New Mexico
- 204 - Agronomic evaluation of new alfalfa varieties and strains in southeastern New Mexico
- 255 - Reselection of New Mexico winter barley
- 260 - Improvement of sorghum hybrids and varieties for the high plains area of eastern New Mexico
- 269 - Pinto bean improvement and management
- 321 - Evaluation of apple varieties and strains on dwarfing, semi-dwarfing, and wooly aphid resistant rootstocks in New Mexico
- 350 - Turfgrass management

### 3. Economics - Federal-grant

- 152 - Marketing of chemical pesticides in New Mexico



5. Entomology - Federal-grant

- 119 - Sources of resistance to the seed chalcids in alfalfa (W-74)
- 135 - The growth and development of Lygus spp. as influenced by cotton plant nutrition
- 137 - The effects of selected physical factors upon the activity of the western harvester ant, Pogonomyrmex occidentalis (Cresson)

5. Entomology - Non-Federal

- 239 - Factors contributing to spider mite populations on dwarf and standard apple varieties
- 290 - Influence of harvester ant control on re-establishment of range grasses
- 309 - Responses of several beef cattle ectoparasites to attractants and to insecticide applications
- 320 - An investigation of insects which affect range grass seed production

6. Plant Pathology - Federal-grant

- 73 - Effects of certain crop residues on root diseases of field beans and cotton incited by a soil fungus complex (W-38)
- 142 - The influence of microbial antagonists on Verticillium albo-atrum

6. Plant Pathology - Non-Federal

- 34 - Cause, prevention, and control of peanut fruit discoloration (Blackhull)
- 115 - Foot and root rots of wheat in the plains area
- 125 - Charcoal rot of sorghum in the plains area of eastern New Mexico
- 211 - The physiology of verticillium wilt of cotton
- 262 - Nature, extent, and control of southern blight (stem rot), general blight and other peanut diseases in the portales area
- 263 - Nature, extent, and control of black, stem and soft rots and observations of other sweet potato diseases in the portales area

## NEW MEXICO (cont'd)

297 - Distribution and prevalence of races of bacterial blight of cotton (Xanthomonas malvacearum (E.F.S.) Dows.) and the development of resistant breeding stock

298 - Cotton seedling disease and soreshin control with chemicals

300 - Factors affecting the prevalence and pathogenicity of soil fungi inducing seedling diseases of cotton

### 7. Soils - Federal-grant

149 - Soils, pesticides and the quality of water (W-82)

### 8. Veterinary Science - Non-Federal

182 - The life histories, biology, and pathogenesis and control of several helminth parasites of sheep in the southwest (W-35)

336 - Studies of worm parasites of cattle on irrigated pastures and on high-rainfall areas of the southwest, with special emphasis on the stephanofilarial species (W-35)

### 9. Weeds - Federal-grant

46 - Factors influencing the application and activity of herbicides on weeds under irrigated conditions in the Mesilla Valley

51 - Ecology of creosote bush (Larrea divaricata) on desert grassland range (W-25)

123 - The selective action of 2, 4-D as related to tissue composition and differential tumor formulation in (Convolvulus arvensis)

125 - Creosotebush control with hormone type herbicides

147 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

### 9. Weeds - Non-Federal

65 - Use of chemicals and plastics for weed control and plastics for early production of vegetable crops

278 - The use of chemicals in controlling weeds in selected vegetables in the middle Rio Grande Valley

### 10. Miscellaneous - All Other - Non-Federal

268 - Effect of rate of seeding, method of planting, herbicides, and growth regulators on yield and quality of alfalfa seed



1. Animal Science - Non-Federal

212 - Nitrate toxicity in cattle

2. Crop Breeding - Federal-grant

56 - The improvement of birdsfoot trefoil through selection and breeding

103 - The establishment and maintenance of permanent grass sod on home and institutional grounds, parks, and highways

118 - Breeding and cytogenetic investigations with the forage plants of New York

119 - Onion breeding

120 - Bean breeding

130 - Permanent improvement of the potato by plant breeding methods

213 - Breeding market cabbage for yield, disease resistance, and uniformity

214 - Breeding celery for disease resistance and better marketability

216 - A study of production factors affecting processing quality and culinary quality of potatoes

275 - Breeding and testing wheat, oats, and barley for yield, quality, winter hardiness, disease resistance and stiff straw

359 - A comparison of inbreeding and recurrent selection as methods for improving quantitatively inherited traits in potatoes

390 - The effect of mineral nutrition on the development of fire-blight on bartlett pears

406 - Developing improved oat varieties for the Northeastern region

465 - The development and assessment of multiline varieties of small grains with emphasis on the competitive interaction of genotypes

2. Crop Breeding - Non-Federal

1 - The development of new potato varieties

3 - Melon breeding

## NEW YORK CORNELL (cont'd)

- 6 - Cucumber breeding
- 61 - An evaluation of new grape varieties for Long Island with emphasis on the fresh fruit market
- 89 - Squash breeding  
(11)
- 93 - Cultural experiments on dry beans
- 120 - Sprout inhibitors and other chemicals for improving storage quality of vegetables
- 132 - Permanent improvement of potatoes through control of disease by development of immune or disease-resistant stocks
- 205 - Breeding lima beans for resistance to downy mildew

### 4. Engineering - Federal-grant

- 260 - Metering distribution and other mechanical characteristics of equipment for the application of agricultural chemicals

### 5. Entomology - Federal-grant

- 93 - Investigations of the control of the six-spotted leafhopper, the vector of aster yellows in lettuce and carrots
- 94 - Studies of insect pests of the onion with special references to onion maggot and onion thrips
- 98 - Biochemical investigations of enzymes associated with resistance in insects
- 99 - Studies on the biology and control of household and structural insect pests
- 102 - Ecological study of the regulation of insect numbers in a community
- 171 - Control of the corn earworm attacking sweet corn in eastern New York
- 175 - Pesticide residues in or on raw agricultural commodities (NE-36)
- 198 - Comparative studies of the physiological activity of biologically active chemicals and the factors which affect the activity
- 285 - A study of honey bees and other pollinating insects and pesticide chemical materials which affect them

- 329 - Control of insects attacking potatoes on Long Island
- 330 - Evaluation of new insecticides for potato insect control
- 438 - The effect of spray deposit and distribution on weathering, redistribution and pest control on crops
- 444 - Microbial degradation of insecticides
- 450 - Reducing the environmental hazard of insecticides

5. Entomology - Non-Federal

- 10 - Studies on the structure, function, and development of insects
- 20 - Studies of the mechanism of action of insecticides with special reference to alkyl phosphates
- 30 - The alfalfa snout beetle investigations (12A)
- 31 - Entomological phases of the Dutch elm disease
- 57 - Forage legume and soil insect investigations (12A)
- 86 - Biology, habits and control of the European chafer
- 93 - Biology and control of flies annoying to man and animals
- 97 - Synthetic materials as insecticides
- 103 - Investigations of insects affecting cruciferous crops on Long Island
- 104 - A study of insects injurious to lima beans on Long Island and methods for their control
- 105 - A study of methods and equipment for applying insecticides
- 106 - Biology and control of insects, mites, and related pests of greenhouse and field grown commercial florists crops and garden flowers
- 108 - Insect pests of nursery crops and woody ornamentals
- 109 - Biology and control of external parasites of cattle with special reference to lice, mange mites, and biting flies
- 110 - A study of the resistance of several important species of forage crops to their more important insect pests (12A)

- 121 - The biology and control of lice and mites that infest poultry in New York
- 124 - A study of the destructive insects of birdsfoot trefoil raised for seed and forage
- 129 - The use of fly larvae for control of undesirable snails
- 131 - A study to determine the most effective and economical equipment and methods for controlling insects attacking vegetable crops on Long Island
- 132 - Residues of pesticides and plant growth regulators in or on raw agricultural commodities
- 135 - Biology and control of the alfalfa weevil
- 136 - The biology and control of the clover root curculio
- 137 - Studies to determine the physiological effect of insect injuries on growth of potato plants, and tolerance of plants to insect attack
- 139 - A study of penetration and stability of insecticides including effects on phytotoxicity and compatibility
- 140 - Bioassay determination of insecticide with Daphnia magna
- 142 - A study of insects affecting the health and welfare of man. (Biting and household insects)
- 143 - A study of the transmission of several forage viruses by the pea aphid, Macrosiphum pisi (Harris)
- 186 - Systemic drugs for control of cattle grubs and other cattle parasites

6. Plant Pathology - Federal-grant

- 2 - The effects of ectotrophic mycorrhizae on tree growth in nature
- 72 - Biochemical studies for the control of the golden nematode disease of potatoes
- 128 - A study of the factors affecting the efficiency of potato spraying and dusting
- 129 - The fire blight disease of pome fruits and its control
- 131 - Diseases of field corn



- 132 - Studies on cercospora foot rot of small grains and grasses
- 187 - Pathology of the wilt disease of trees in the northeast (NE-25)
- 188 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)
- 228 - Diseases of muckland vegetable crops. Lettuce stunt or wilt and root rot
- 230 - The physiology of plant-virus infection
- 257 - Investigations on root rot diseases of herbaceous ornamentals
- 297 - Smut diseases of small grains
- 298 - The rust diseases of small grains
- 317 - Investigations on stem and root rot diseases of ornamental plants with emphasis on control by means of chemical treatments
- 338 - Root rot and other diseases of bean
- 340 - Mosaic and other diseases of tomato
- 344 - Factors affecting the survival and growth of plant pathogenic fungi in soil
- 350 - The use of fungicides, fumigants and other amendments for the control of common scab, early maturity wilts, and other diseases of potatoes caused by soil borne pathogens on Long Island
- 351 - The use of fungicides, fumigants and other amendments for the control of diseases of vegetables caused by soil borne pathogens on Long Island
- 370 - Research on diseases of turf grasses
- 380 - Blotchy ripening disorder of tomato fruits, its nature, cause and correction
- 393 - Root and crown diseases of alfalfa and clovers (NE-45)
- 395 - Biology and control of fungi and bacteria causing onion bulb rots
- 466 - Virus diseases of deciduous tree fruits and their control (NE-14)
- 469 - Onion treatment techniques to reduce incidence of neck rot in storage and improve market quality

6. Plant Pathology - Non-Federal

- 38 - Etiologic studies on diseases of forest, shade and ornamental trees and shrubs (Sub-project I)
- 62 - The nomenclature, classification, and physiology of bacterial plant pathogens
- 119 - Internal blackening and breakdown in cauliflower
- 130 - Control of diseases of miscellaneous ornamentals grown under glass
- 151 - Bacterial diseases of plants
- 163 - Diseases of chrysanthemums and their control
- 174 - Golden nematode of potatoes
- 206 - Studies on diseases of nursery stock
- 218 - Diseases of ornamental cut-flower and pot plant crops grown in the New York metropolitan area, and their control
- 245 - Studies on diseases of vegetable crops
- 252 - A study of the factors affecting the efficiency of spraying vegetables for disease control on Long Island
- 266 - Potato seed treatment
- 268 - Unexplained and minor diseases of fruit trees, their epiphytology and their control
- 277 - Studies on the morphology, taxonomy, life histories, nomenclature and terminology of fungi
- 279 - Development and evaluation of vegetable disease control measures
- 284 - Studies on the root rot of trees caused by Fomes annosus
- 285 - Nematodes parasitic on and associated with the roots of nursery crops
- 287 - Nematode diseases of ornamental plants and their control
- 288 - Physiology of infection in foliage diseases of forage crops
- 289 - Vascular wilt diseases of ornamental plants



- 293 - Evaluation of soil amendments for control of common-scab and rhizoctonia disease of potato
- 295 - Studies on the parasitism and pathogenicity of plant parasitic nematodes (of New York State)
- 296 - Taxonomy, life history, and geographical distribution of plant parasitic and other soil inhabiting nematodes of New York
- 300 - Control of bacterial spot and fusicoccum canker of peach in eastern New York
- 301 - Epidemiology and control of onion leaf diseases
- 302 - The genetics and taxonomy of Botrytis
- 303 - Biology, pathogenicity, and control of Urocystis cepulae causing onion smut

7. Soils - Federal-grant

- 473 - The behavior of pesticides in soils

8. Veterinary Science - Non-Federal

- 174 - Development of a palatable phenothiazine-salt mix and its use in internal parasite control

9. Weeds - Federal-grant

- 165 - Control of nut grass in agricultural regions
- 184 - Herbicidal residue studies in and/or on forage crops and in products from animals fed these forages (NE-36)
- 185 - The control of annual and perennial weeds in field crops, seedling and established forage crops
- 190 - Herbicide residues in or on vegetable crops (NE-36)
- 237 - The role of microflora in the persistence and decomposition of pesticide residues
- 369 - Mode of action of selective herbicides useful for vegetable production
- 371 - Principles in the control of submersed aquatic plants (CRF-1)
- 376 - Factors affecting the dormancy, germination and growth of perennial weed species and methods of control in agronomic crops

- 377 - Factors affecting the dormancy, germination and growth of yellow rocket (Barbarea vulgaris) and methods of control in agronomic crops (NE-42)
- 381 - Establishment and description of symptoms of typical growth in some major ornamental nursery crops and weeds following herbicide-root contact
- 385 - Weed control in landscape plantings
- 412 - Control of annual and perennial weeds in turfgrass sod
- 422 - Woody brush control

9. Weeds - Non-Federal

- 80 - Studies of weed control procedures for vegetable crops on Long Island
- 121 - Studies of chemical weed control in florist and nursery crops and gardens exclusive of turf
- 126 - Control of annual bluegrass with arsenicals
- 135 - Evaluation of herbicides for their utility in vegetable crop production
- 136 - Studies of herbicide formulations and application techniques as related to effectiveness and crop tolerance

10. Miscellaneous - All Other - Federal-grant

- Chemical and non chemical measures for the protection of perishable food commodities in marketing channels (NEM-33)
- 360 - The mode of inheritance of two traits in S. vernei

2. Crop Breeding - Federal-grant

- 32 - Breeding adapted sweet corn hybrids with disease resistance, high yield, and good quality for canning and freezing (NE-32)
- 16 - Breeding and genetics of peas, Pisum sativum
- 17 - Introduction, evaluation, propagation and preservation of valuable plants for industrial uses and crop improvement in the northeast (NE-9)
- 33 - The production of new varieties of snap beans by breeding

2. Crop Breeding - Non-Federal

- 2 K - Improvement of black raspberries by breeding
- 2 M - The improvement of strawberries by breeding
- 4-1 - Tomato breeding and selection
- 7 - A test of American grape varieties grafted on vigorous or hardy rootstocks
- 7 - Discovery and preservation of valuable plant germ plasm (NE-9)
- 24 - Production of fruits resistant to diseases, insects, and other adverse agencies by breeding and other means
- 34-D - Responses of cherry trees to insecticidal sprays  
E-65
- 79 - Breeding broccoli and cabbage resistant to downy mildew  
86
- 86 - Influence of fertilizer and other horticultural practices on mechanical harvesting efficiency of Montmorency cherries
- 86 - The nature and inheritance of genetic variation in mineral element utilization of vegetable processing crops
- 90 - Breeding and evaluation of pickling cucumbers  
82
- 92 - A study of sampling procedures and analytical techniques for quality comparisons of McIntosh apples
- 97 - Control of Fusarium root rot of snap beans

5. Entomology - Federal-grant

- 5 - Insect vectors involved in the transmission of diseases of vegetable canning crop
- 19 - Pesticide residues by chemical analyses in or on fruits and vegetables at harvest and at intervals during the growing season (NE-36)
- 22 - Insect and mite pests of strawberry
- 26 - Natural factors affecting the abundance of the red-banded leaf roller
- 39 - Transformations of insecticides by plants (NE-53)

5. Entomology - Non-Federal

- E-1 - Evaluation of new insecticides for control of codling moth
- E-2 - Biology and control of the red-banded leaf roller
- E-5 - Evaluation of equipment for insect control on fruit trees
- E-6 - Development of apple spray programs in relation to spray residue restrictions, and apply quality
- E-8 - Biology and control of orchard mites in eastern New York
- E-9 - Control of plum curculio with new insecticides
- E-10 - Investigations on the control of various insects affecting small fruits in the Hudson Valley
- E-11 - Biology and control of apple maggot in eastern New York
- E-12 - Biology and control of codling moth in eastern New York
- E-13 - Insect and mite pests of plum
- E-14 - Control of oriental fruit moth and minor pests of peach and quince
- E-16 - Biology and control of the peach tree borer
- E-18 - Control of apple aphids in western New York
- E-20 - Biology and control of the cherry fruit flies



NEW YORK STATE (cont'd)

- E-21 - Biology and control of insects of cherry other than cherry fruit flies
- E-22 - Biology of orchard mites
- E-23 - Control of orchard mites in western New York
- E-25 - Biology and control of pear pests
- E-28 - Biology and control of insect pests of bramble fruits (including blueberry tip borer studies)
- E-29 - Currant stem girdler and currant borer
- E-30 - Improvement of equipment for the application of insecticides in vineyards
- E-32 - Biology and control of grape insects other than the grape berry moth
- E-33 - Influence of fertilizers on yield and growth response of Concord grapes treated with the recommended spray program
- E-34 - Laboratory investigation on insecticides used to control pests of fruit crops in the Lake Erie district
- E-35 - Biology and control of grape berry moth
- E-36 - Current status and biology of the Japanese, oriental and Asiatic garden beetles, and the masked chafer, in New York
- E-38 - Control of annual turf grubs in eastern New York with soil insecticides
- E-39 - Control of the Japanese and oriental beetles with parasites and milky disease
- 39 - Official inspection analyses of insecticides and fungicides for the state of New York
- E-41 - Biology and control of insect and mite pests of elm
- E-42 - Insect and mite pests of nursery grown fruit trees
- E-43 - Biology and control of insect and mite pests of ornamental trees, shrubs, conifers and non-florist types of plants in western New York

NEW YORK STATE (cont'd)

- E-44 - A Study of the biology and control of the European chafer and related scarabeoid species as this applies to the nursery industry, ornamental plantings and turf areas
- E-46 - Studies of insecticides for the control of foliage injuring insects of cabbage and related crops
- E-47 - Control of the Mexican bean beetle and other insects of canning beans
- E-52 - Cabbage maggot and its control
- E-53 - Biology and control of insects infesting peas
- E-56 - Insect and mite pests of spinach
- E-59 - Biology and control of the European apple sawfly
- E-65 - Response of cherry trees to insecticidal sprays  
34-D
- E-66 - Insect vectors of the viruses affecting stone fruits in New York  
PP-62
- E-68 - Biology and control of Drosophila
- E-69 - Biology and control of corn flea beetles as vectors of Stewart's disease of sweet corn
- E-70 - Occurrence, parasitism and control of the European corn borer in the Hudson Valley
- E-71 - Seasonal occurrence and control of the corn earworm in the Hudson Valley
- E-73 - Insect vectors involved in the transmission of diseases of  
PP-82 vegetable canning crops
- E-74 - Biology and control of the grape phylloxera
- E-75 - The evaluation of systemic and residual pesticides by means of a bioassay technique
- E-76 - Bioassay of pesticide residues on fresh fruits and vegetables
- E-77 - Bioassay of pesticide residues on processed fruits and vegetables
- E-78 - Analysis of pesticide residues in soil by biological assay
- E-81 - Biology and control of arthropod pests on strawberries



## NEW YORK STATE (cont'd)

- E-82 - The utilization of micro-organisms in cole crop insect control
- E-83 - The insects and mites that feed on apple
- E-84 - Bionomics of lepidopterous pests in Hudson Valley orchards
- E-85 - Insect vectors of strawberry viruses
- E-86 - Mode of action of insect and mite ovicides
- E-87 - Natural factors affecting the abundance of the red-banded leafroller
- E-88 - Biology and control of red-banded leafroller and *Drosophila* on grapes
- 88 - The persistence and toxicity of insecticides incorporated into soils for the control of soil inhabiting insects
- 89 - Biology and control of insects affecting processing corn
- 90 - Transformation of insecticides by plants
- 91 - Utilization of radioisotopes and irradiation in entomological and pesticide residue investigations
- 92 - Physiology of bacterial sporulation and germination
- 152 - Development of screening methods for the determination of pesticide residues with the use of gas chromatography and infra red spectroscopy

### 6. Plant Pathology - Federal-grant

- 7 - The nature and development of resistance to disease of canning crop vegetables
- 15 - Production and maintenance of virus-free foundation stock of commercial fruit varieties for the nursery trade (NE-14)
- 30 - Biology of plant-pathogenic nematodes associated with orchard and small fruit crops (NE-34)
- 38 - Obtaining and preserving virus-free deciduous tree fruit clones (IR-2)

6. Plant Pathology - Non-Federal

- 1 - Prevalence of small fruit diseases in New York State
- 7 - Control of powdery mildew on black raspberries
- 8 - Verticillium wilt and other soil-borne diseases of strawberries
- 9 - Virus diseases of raspberries
- 10 - Virus diseases of strawberries
- 20 - Detection of seed-borne fungi and other pests during routine testing
- 26 - Survey of vegetables diseases in New York State
- 27 - The ability of fungi from diverse sources to establish themselves in seeds of small grains and grasses
- 28 - Evaluation of chemical formulations and energy processes as seed treatments of major crop plants
- 28-1 - The nature and development of resistance to disease of canning crop vegetables
- 32 - The evaluation of spray formulas, the compatibility of fungicides and insecticides, and the means of expediting their application
- 33 - Production and maintenance of virus-free foundation stocks of  
54 commercial fruit varieties for the nursery trade
- 35 - Urea foliage sprays as means for controlling nutrition of fruit plants and their disease relationships
- 36 - Preparation, biological testing, and chemical assay of new fungicides and spray adjuvants
- 36 - Cherry leaf-spot and brown rot control
- 37 - The control of fungus, bacterial and virus infections of host plants by the absorption of a chemotherapeutant into the host tissues, and by translocation of the chemotherapeutant to other parts of the plant
- 40 - Fruit tree virus disease control in the Hudson Valley including X-disease, yellows and little peach on stone fruit, green mottle and other virus diseases of pome fruits
- 44 - Peach leaf curl and brown rot control

NEW YORK STATE (cont'd)

- 54 - Production and maintenance of virus-free foundation stock of commercial fruit varieties for nursery
- 60 - The nature and control of blossom-end rot of tomato
- 63 - Environal and vector relationships, host range determinations and varietal reactions of raspberries in relation to virus diseases
- 64 - Determination of host ranges and behavior of viruses affecting stone fruits
- 68 - The effects of fungicidal treatments on seed germination and subsequent stands of nursery understocks of apple, peach, myrobalan, mazzard, and mahaleb
- 70 - The control of nematodes on horticultural crops
- 70 - Virus and virus-like abnormalities of pome fruits
- PP-73
- 73 - Virus and virus-like abnormalities of pome fruits
- 74 - Evaluation of new fungicides and application schedules for the control of fungus diseases of apple, cherry, and plum nursery
- 42
- 76 - The production of apple varieties resistant to apple scab, cedar rust fungi and apple mildew
- 24
- 78 - Evaluation of newer fungicides for the control of grape diseases
- 79 - Virus diseases of grapes
- 81 - Decline of raspberries in western New York
- PP 82 - Insect vectors involved in the transmission of diseases of vegetable canning crops
- ENT 73
- 84 - Development of an economical spray program for the control of apple diseases in the Hudson Valley
- 85 - Biology of plant-pathogenic nematodes associated with orchard and small fruit crops
- 86 - Breeding broccoli and cabbage resistant to downy mildew
- 79

NEW YORK STATE (cont'd)

- 87 - Control of post-emergence damping-off of table beet seedlings and root rots of table beets
- 88 - Foliage diseases of cabbage in the field and in storage
- 89 - Development of a spray program for the control of pear diseases in the Hudson Valley
- 90 - Control of bacterial spot and fusidocccum canker of peach in eastern New York
- 91 - The evaluation of fungicides for vegetable diseases and the improvement of application procedures for more effective control of these diseases
- 92 - Greenhouse investigations on orchard fruit pathogens and the evaluation of fungicides and their control
- 93 - Entry into, movement and chemical and biological fates of fungicides within plants with respect to systemic control of disease
- 94 - Stone fruit virus disease control
- 95 - Apple and pear virus diseases and their control in the Hudson Valley
- 98 - Etiology and control of diseases of processing beans

9. Weeds - Federal-grant

- 28 - Weed control in fruit plantings

9. Weeds - Non-Federal

- 25 - Studies on vineyard tillage
- 87 - Weed control in fruit plantings
- 97 - Extension demonstration and study of weed control measures for fruit plantings

10. Miscellaneous - All Other - Federal-grant

- 41 - Trace levels of pesticide residues in agricultural commodities in marketing (NCM-37)

10. Miscellaneous - All Other - Non-Federal

- 21 - Detecting chemical treatment of seeds in service and enforcement testing



## NORTH CAROLINA

### 2. Crop Breeding - Federal-grant

- 3016 - The breeding of grain-type soybean strains that are superior to existing varieties in agronomic characters and possess resistance to the common diseases
- 3017 - Breeding investigations for improvement of corn strains adapted to North Carolina
- 3025 - Irish potato breeding
- 3026 - Blueberry breeding
- 3027 - Strawberry breeding
- 3028 - Breeding productive, high quality, more disease-resistant tomatoes for North Carolina
- 3029 - Sweet potato breeding and testing
- 3069 - Crossbreeding and selection of Arachis hypogaea
- 3091 - The introduction, evaluation, and improvement of new crops for industrial and agricultural uses (S-9)
- 3144 - Evaluation and breeding of tropical and sub-tropical forage grasses
- 3152 - The development of improved varieties of winter wheat, oats and barley
- 3160 - Lespedeza, crownvetch, and new legumes - breeding for forage quality, yield, and disease resistance

### 2. Crop Breeding - Non-Federal

- 5006 - Cucurbit breeding and genetics
- 5012 - The development of alfalfa varieties with high productivity, persistence, and resistance to disease and insect pests
- 5018 - Varietal evaluation studies in flue-cured tobacco
- 5021 - Peach breeding
- 5026 - Breeding for disease resistance
- 5033 - Reduction of undesirable woody vegetation in forest stands

## NORTH CAROLINA (cont'd)

- 5113 - A greenhouse technique for studying the inheritance of fusarium wilt in cotton
- 5119 - Testing varieties and selections of muscadine grapes and bramble fruits
- 5164 - The development of improved plant bed management procedures, more effective cropping systems, fertilization, cultural, handling practices and improved varieties of burley tobacco from the standpoint of disease resistance, quality and yield

### 5. Entomology - Federal-grant

- 3011 - The control of cotton insects in North Carolina
- 3012 - Investigation of insects affecting the forage crops in North Carolina
- 3013 - Insecticidal control of insects attacking flue-cured burley tobacco
- 3057 - Pesticide residues in or on forage crops and in products from animals fed these forages (S-22)
- 3081 - The effect of insects and pesticides on the quality of apples
- 3096 - Vegetable insect control with insecticides and resistant plant varieties
- 3126 - Metabolism of phospholipids in insects

### 5. Entomology - Non-Federal

- 5015 - Techniques for the chemical determination of pesticide residues and their applications in research with plants, soils and animals
- 5019 - Biology, ecology and control of insects affecting tobacco
- 5023 - Cooperative economic insect survey (North Carolina)
- 5036 - Studies of the biology and ecology of the corn earworm, Heliothis zea (Bod.), and the tobacco budworm, Heliothis virescens (F.)
- 5058 - The eriosomatinae (Aphidae: Homoptera) with special reference to the genus Prociphilus
- 5066 - Taxonomic research on the Homoptera
- 5067 - Improvement of the North Carolina State College insect collection



NORTH CAROLINA (cont'd)

- 5080 - The bionomics and control of insects affecting horticultural crops
- 5095 - Biology and control of the blueberry bud mite and blueberry insects
- 5107 - The role of arthropods in forest litter reduction
- 5111 - Life history and control of the anobiid powder-post beetle, Xyletinus peltatus (Harris)
- 5121 - Integrated control of the house fly
- 5125 - Biology and control of eye gnats (Hippelates spp.)

6. Plant Pathology - Federal-grant

- 2013 - A fundamental study on transit, storage and market diseases which affect quality of vegetables
- 3030 - Etiology, epiphytology and control of soil-borne diseases of peanut
- 3031 - Improved control of apple diseases under North Carolina conditions
- 3032 - Investigation of some virus diseases and fusarium wilt of sweet potatoes
- 3033 - The control of tobacco diseases by soil fumigation
- 3092 - Studies on the cause and control of diseases affecting vegetable crops in North Carolina
- 3100 - Studies on diseases of small grains in North Carolina
- 3103 - Studies on reproduction and taxonomy of certain plant-parasitic nematodes
- 3107 - Nematode population dynamics in relation to land management practices
- 3114 - Causes and control of major diseases affecting forest trees in North Carolina
- 3132 - Mechanism of glucose repression of induced enzyme biosynthesis in bacteria
- 3157 - Behavior of tree roots in relation to their environment
- 5063 - Studies of plant-parasitic nematodes with emphasis upon variation in Meloidogyne spp. and control of Heterodera glycines (S-19)

NORTH CAROLINA (cont'd)

6. Plant Pathology - Non-Federal

- 5007 - Diseases of forage crops
- 5013 - Studies on the development and control of Irish potato diseases
- 5025 - Genetics of disease resistance in tobacco
- 5027 - The etiology and epiphytology of tobacco diseases
- 5028 - Control of tobacco diseases by cultural practices and chemicals
- 5029 - Investigations on diseases of corn
- 5038 - Studies on the causative agents, seasonal development, and control of peach diseases
- 5076 - Diseases of ornamental flowering bulbs and field-grown cut flower crops
- 5077 - Diseases of woody ornamentals
- 5078 - To study root rot complex of chrysanthemum incited by Pythium spp.  
To study etiology and control of root rot of Lilium longiflorum  
To study etiology and control of root rot and wilt of Hedera  
lulix and Petunia hyrida
- 5079 - Etiology, epiphytology and control of cotton diseases caused by soil inhabiting organisms
- 5094 - Diseases of horticultural crops in western North Carolina
- 5115 - Studies on the nature, cause and control of soybean diseases in North Carolina
- 5129 - Study of disease complexes in flue-cured tobacco

8. Veterinary Science - Federal-grant

- 3005 - Gastrointestinal parasites of ruminants (S-21)

8. Veterinary Science - Non-Federal

- 5030 - An investigation of the biology, the pathogenicity and the control of the swine kidney worm (Stephanurus dentatus)
- 5053 - Physiological, prophylactic and therapeutic properties of enterohepatitis drugs for chickens and turkeys
- 5054 - Internal parasites of swine

9. Weeds - Federal-grant

- 3018 - Weed control in corn, sorghum, tobacco, small grain, horticultural crops, and the specific control of Bermuda grass and wild garlic
- 3038 - Plant response to organic chemicals in the root environment
- 3090 - Factors influencing the toxicity of herbicides in the root environment (S-18)
- 3121 - The fate of herbicides in soils (CRF-1)
- 3122 - Physiological mechanisms involved in the selective phytotoxic action of herbicides
- 3123 - Weed control in horticultural crops

9. Weeds - Non-Federal

- 5022 - Determination of the physiological mechanisms involved in the selective action of herbicides
- 5060 - The development of practices for the control of weeds in peanuts, cotton, soybeans, forage crops, and for the control of undesirable plants on highway properties
- 5102 - Tobacco weed control, with studies carried through quality evaluation and residue analysis
- 5127 - Weed control in turf

10. Miscellaneous - All Other - Federal-grant

- 0032 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

2. Crop Breeding - Federal-grant

- 6-1 - Hard red spring wheat improvement
- 6-7 - Low temperature endurance in corn
- 6-8 - Breeding and genetics of spring barley
- 6-9 - Improvement of sweet clover
- 6-13 - Breeding and genetics of flax
- 6-14 - Durum improvement
- 12-1 - Potato breeding in North Dakota
- 12-7 - Culture, testing and breeding of hardy ornamentals

2. Crop Breeding - Non-Federal

- 6-2 - Breeding improved varieties of oats for North Dakota

5. Entomology - Federal-grant

- 5-5 - Wheat plant structures in relation to wheat stem sawfly resistance
- 5-7 - Factors influencing the distribution and abundance of grasshoppers (NC-52)
- 5-8 - Potato insect investigations
- 5-9 - Insect vectors of barley yellow-dwarf virus
- 5-10 - Effects of phosphate pesticides on soil microorganisms
- 5-11 - Insects affecting sugar beet production
- 5-12 - Control of dipterous pests of livestock
- 5-13 - Migration of aphids and noctuids (NC-67)
- 5-14 - Bionomics of the cereal leaf beetle (NC-73)

5. Entomology - Non-Federal

- 5-1 - Emergency insect control
- 5-2 - North Dakota insect survey and insect collection



6. Plant Pathology - Federal-grant

- 2-7 - The detection of barley stripe mosaic virus in diseased plants
- 2-9 - Intermediary metabolism of the flax rust fungus, Melampsora lini (Pers.) Lev
- 13-3 - Etiology and control of the black point disease of durum wheat
- 13-4 - Etiology and control of seed, seedling and root disease of barley
- 13-5 - Biology and control of bacterial and fungal diseases of potato
- 13-6 - Mechanisms of survival of root-infecting fungi in soil (NC-70)

6. Plant Pathology - Non-Federal

- 6-8 - The cause of "black chaff" disease in wheat
- 8-2 - Serological aspects of the nature of rust-resistance
- 13-2 - An evaluation of potato fungicides
- 13-3 - The production of latent-mosaic-free seed potatoes
- 13-4 - The testing of new selections and varieties for resistance to the organism causing potato scab
- 13-7 - Testing potatoes for resistance to the fungus, Phytophthora infestans causing late blight
- 13-9 - Pathogenicity, variation and importance of barley foliar diseases in North Dakota

8. Veterinary Science - Federal-grant

- 16-1 - Rates of excretion of chemotherapeutic agents administered to the bovine
- 16-4 - The effect of gastrointestinal round worms on the utilization of various substances in lambs
- 16-8 - Histomoniasis of turkeys

8. Veterinary Science - Non-Federal

- 16-1 - The internal parasites of domestic and wild mammals and birds of North Dakota

NORTH DAKOTA (cont'd)

9. Weeds - Federal-grant

6-17 - Weed control practices and related basic problems

9-1 - Control of quackgrass, field bindweed, leafy spurge, perennial sow thistle and Canada thistle by means of competitive crops supplemented by selective herbicides

9-3 - Some factors affecting the control of annual weeds

10. Miscellaneous - All Other - Federal-grant

12-14 - Trace levels of pesticide residues in agricultural commodities in marketing channels (NCM-37)



2. Crop Breeding - Federal-grant

- 20 - Breeding field corn for Ohio
- 32 - Oat breeding and testing
- 46 - Development and evaluation of improved varieties of soybeans for farm and industrial utilization
- 72 - Introduction, multiplication, and preservation of valuable disease resistant and other genes in the genus Lycopersicon (NC-7)
- 215 - Fundamental research in corn breeding methods leading to isolation of superior germ plasm
- 216 - Wheat breeding and evaluation

2. Crop Breeding - Non-Federal

- 48 - Tests of new and uncommon pear varieties with particular reference to tree characters, yield and dessert quality of the fruit
- 61 - Winter barley breeding and testing
- 80 - Breeding greenhouse vegetables
- 262 - Turf culture and pest control
- 353 - Evaluation of new and standard strains of forage crops
- 367 - Correction of apple tree decline associated with periodical cicada nymphs and low soil pH

5. Entomology - Federal-grant

- MS-3 - Integrated control of the insect and mite pests of pine trees
- 7 - Evaluating insect resistance in onion varieties, strains, and hybrids
- 18 - The biology and control of insect and mite pests of stone fruits
- 23 - Evaluating insect resistance in varieties and strains of potato

OHIO (cont'd)

- 25 - The insect phases of greenhouse vegetable crop production with emphasis on insect pollinators as well as destructive pests
- 68 - Biology, ecology and control of forage crop insects, with special emphasis on clover leaf weevils, the potato leaf-hopper, and the meadow spittlebug
- 111 - Biology and control of corn insects
- 111-1 - The insect phases of the corn research program -- 1. the effect of time of planting, weather, and character of plant growth on corn borer populations (NC-20)
- 147 - Pesticide residues on animal feeds and human food (NC-33)
- 268 - Studies on the mechanism of physiological action of insecticides
- 269 - Chemical factors influencing the choice of host plants by insects
- 282 - Bionomics of the cereal leaf beetle (NC-73)

5. Entomology - Non-Federal

- 119 - A comparative study of the taxonomic characters of the gnathosoma of Acaridei (Acarina)
- 120 - Water balance and nutrition in mites
- 134 - A study of the spatial pattern of an orchard mite, Panonychus ulmi (Koch)
- 197 - Investigations on insects attacking ornamental plants
- 198 - Biology and control of vegetable crop insects
- 253 - The biology and control of insects and mites attacking apples and pears
- 297 - The bionomics and control of insect pests attacking livestock with special emphasis on the face fly, Musca autumnalis (DeGeer)
- 376 - The biology, ecology, and control of insect pests attacking cereal crops with special emphasis on the cereal leaf beetle, Oulema melanopa (L.)

6. Plant Pathology - Federal-grant

- 6 - Soil and rhizosphere actinomycetes in relation to root infecting pathogens and plant disease
- 15 - The control of fungous and bacterial diseases of fruit plants
- 19-1 - The comparison of new fungicidal, chemotherapeutic and nutritional formulations for the control of vegetable diseases
- 19-2 - The development of new methods for the application of fungicidal formulations to vegetables, with particular reference to the use of low-gallonage sprays
- 37 - Pathogenic variability and the inheritance of disease resistance in tomato
- 63-1 - Effect of crop rotations on the incidence of diseases caused by soil-borne pathogens and associated changes in soil fungus populations
- 63-3 - Stalk rot of corn
- 72-2A - Biology of the tomato early blight organisms with reference to the existence of races and resistance (NC-7)
- 75 - Forage crop and soybean disease investigations
- 85 - Virus diseases of deciduous tree fruits and their control (NE-14)
- 86 - Fundamental study of the tobacco mosaic virus and other viruses of greenhouse tomatoes
- 96-1 - Pathological aspects of the oak wilt disease (NC-22)
- 131 - Control of soil-inhabiting nematodes, fungi, bacteria, and insects affecting vegetable crops
- 173 - The control of plant parasitic nematodes (NC-39)
- 219 - Biological control of diseases on the aerial parts of plants
- 243 - Factors that affect the formation and germination of sclerotia of certain important plant pathogenic fungi

OHIO (cont'd)

- 244 - The nature and control of diseases of woody ornamental plants
- 245 - Investigations of damping-off and root-rot diseases of greenhouse floral crops

6. Plant Pathology - Non-Federal

- 357 - Diseases of outdoor plants grown for decorative uses, with special emphasis on rose and gladiolus

8. Veterinary Science - Non-Federal

- 312 - Control of parasites in livestock and poultry
- 386 - Swine parasite control

9. Weeds - Federal-grant

- 71-1 - Eradication or control of weeds and other undesired plants -- I, the chemical and cultural control of weeds in field crops (NC-10)
- 71-2 - Eradication or control of weeds and other undesired plants -- II, chemical and cultural weed control studies with horticultural crops (NC-10)
- 71-6 - Weed control in turf
- 254 - Basic physiological and morphological responses of weed crop species to herbicides

10. Miscellaneous - All Other - Federal-grant

- 222 - Radiochemical determinations of pesticides and food additives before, during, and after processing
- 234 - Influence of pesticide chemicals on the physiology and metabolism of the foliage and fruit of the apple
- 303 - Trace levels of pesticide residues in agricultural commodities in marketing (NCM-37)

## OKLAHOMA

### 2. Crop Breeding - Federal-grant

- 400 - Sorghum Breeding Investigation - The development of improved varieties of sorghum
- 518 - Breeding of disease-resistant wheats adapted to Oklahoma
- 596 - Improvement of sweetpotatoes by breeding
- 832 - Breeding to improve alfalfa for pasture and hay
- 1204 - Improvement of tomatoes and watermelons

### 5. Entomology - Federal-grant

- 312 - Biology and control of vectors of anaplasmosis
- 593 - The control of external parasites of domesticated animals
- 1118 - Biology, ecology and control of arthropods attacking sorghums
- 1127 - Investigations of the biology and control of arthropods attacking small grains
- 1235 - Bionomics, ecology and control of the Nantucket pine tip moth

### 6. Plant Pathology - Federal-grant

- 481 - Disease resistance in sorghums
- 482 - New developments in the use of fungicides for cotton seedling disease control
- 1223 - Helminthosporium sativum disease of barley
- 1224 - Leaf rust disease of wheat
- 1225 - Crown rust disease of oats
- 1238 - Effect of site quality and mycorrhizae on establishment and development of shortleaf pine
- 1262 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)



9. Weeds - Federal-grant

933 - Control of weeds in cultivated crops

1146 - Control of undesirable woody species in the southern Great  
Plains (CRF-1)



2. Crop Breeding - Federal-grant

- 363 - The nature and inheritance of Fusarium root rot resistance in beans (W-83)
- 455 - Breeding and evaluation of disease resistant peas

2. Crop Breeding - Non-Federal

- 36 - Improvement of yield and quality of hops
- 49 - Introduction, testing, breeding, and selection of vegetable crops for processing and for fresh market
- 186 - Improving crop production methods for field, forage, and seed crops grown in the southern Oregon area
- 191 - Truck crops production in the southern Oregon area with special reference to adapted varieties, fertilization, and weed control
- 240 - Improvement and varietal testing of small grains in northeastern Oregon
- 248 - Horticultural crop production improvement and variety selection and breeding for the irrigated lands of northeastern Oregon
- 266 - Adaptability and management practices of agronomic crops in northeast Oregon
- 373 - Cereal breeding and varietal testing for adaptability to the lower rainfall area of the Columbia Basin
- 379 - Improving vegetable and fruit production practices in the Vale-Owyhee area
- 460 - Improvement of the snap bean
- 465 - Development of brush control methods on forest lands
- 528 - Pathological and physiological aspects of tree decline of the pear
- 675 - Introduction, breeding, testing and selection of small fruits
- 695 - Environmental control, cultural practices, harvesting and handling of small fruit crops in the north Willamette area

## OREGON (cont'd)

### 4. Engineering - Federal-grant

- 502 - Development of mechanical equipment for application of agricultural chemicals

### 5. Entomology - Federal-grant

- 87 - Injurious insects affecting forage crops and forage crops seed production
- 90 - Toxicology and testing of insecticides
- 99 - Life history, taxonomy, food habits and ecological inter-relationships of grain pests, with special reference to mites (WM-16)
- 252 - Flight behavior and olfactory responses of the douglas-fir and other beetles associated with douglas-fir forests of western Oregon
- 291 - Studies on the relationship of the mite Pediculopsis graminum Reut. to silver top disease in Oregon grasses
- 447 - Role of insects, fungi, and nematodes in the deterioration of forage legume roots
- 575 - Sampling methods for the douglas-fir beetle and its natural enemies
- 583 - The biology and effectiveness of predators of the douglas-fir beetle

### 5. Entomology - Non-Federal

- 78 - Interactions between pesticides and soil microorganisms
- 85 - Chemical aspects of the use of insecticides and fungicides on Oregon crops and livestock
- 86 - Entomological pests of vegetable crops
- 88 - Biology and control of entomological pests of nut crops
- 89 - Biology and control of entomological pests of tree fruits
- 93 - Biology and control of insects affecting nursery crops and ornamental plantings
- 94 - Biology and control of entomological pests of berry crops

## OREGON (cont'd)

- 97 - The biology and control of arthropods affecting man and animals
- 109 - The bionomics and control of injurious soil arthropods
- 252 - Biology and control of insects affecting forest trees and wood products
- 267 - Enzymological studies of economically and medically important insects, with special reference to their resistance to insecticides
- 327 - Physiological investigations of certain insect tissues and products
- 509 - Biology and control of insect pests of mint and dill
- 510 - Taxonomy, biology and economic importance of white grubs (Scarabaeidae)
- 515 - Control of external parasites of pet animals by means of systemic insecticides
- 577 - Western harvester ant: economic importance, biology, and control
- 578 - Survey of aquatic insects in Oregon
- 665 - Effects of pesticides on estuarine organisms

### 6. Plant Pathology - Federal-grant

- 44 - Virus and similar diseases of orchard trees
- 120 - Control of mint diseases
- 178 - The detection and identification of plant pathogens associated with forage legume seed (WM-35)
- 196 - Relation of crop residues to development of Verticillium-induced diseases (W-38)
- 335 - Occurrence, etiology and control of forage legume pathogens
- 336 - Etiology and control of diseases of forest trees
- 344 - Identification, etiology and control of virus diseases of deciduous fruit trees (W-64)
- 640 - Interrelation of nematodes and other pathogens in plant disease complexes (W-56)

6. Plant Pathology - Non-Federal

- 33 - Diagnosis and differentiation of virus diseases
- 64 - Potato diseases, their cause, mode of action and control
- 65 - Diseases of vegetable crops
- 66 - Cereal diseases, their cause, mode of action and control
- 67 - Cause and control of diseases of nursery plants
- 68 - Virus diseases of strawberries including the development and maintenance of virus-free planting stocks
- 82 - Identification and control of plant parasitic nematodes
- 84 - The nature and control of forage crop diseases
- 92 - Non-virus diseases of orchard crops
- 118 - Diseases of bulb and florist crops
- 126 - Evaluation of fungicides for the control of diseases of tree fruits
- 137 - Diseases of small fruits
- 275 - Relationships of aquatic flora to water quality and pollution
- 333 - Development of methodology for certification that fruit tree and ornamental nursery stock are virus-free .
- 457 - The mode of action, toxicity, and factors influencing the effectiveness of fungicides
- 458 - Physiology of parasitism and the nature of plant disease resistance
- 563 - Participation of carbohydrate catabolic pathways in dissimilation of nitrate nitrogen
- 619 - Relationship of Poria weirii root rot to douglas-fir management
- 654 - Organic mercurial fungicides and metabolism

8. Veterinary Science - Federal-grant

- 28 - The nature and control of avian coccidia
- 433 - The bionomics, pathogenicity and control of ruminant nematodes (W-35)
- 685 - Control of fascioliasis in domestic ruminants

9. Weeds - Federal-grant

- 141 - Biochemical investigations of the influences of herbicides, plant growth regulators, climatic conditions and ionizing radiation in relation to the production of Oregon crops
- 257 - Fundamental biochemical and biophysical mechanisms involved in herbicidal action (W-52)
- 284 - The metabolism of herbicides by plants as related to the residue problem (W-45)
- 348 - The chemistry, mode of action, toxicity and factors influencing the effectiveness of herbicides and plant growth regulators
- 349 - Properties of herbicides influencing their physiological effectiveness in weed control as influenced by environmental factors (W-63)

9. Weeds - Non-Federal

- 41 - Selective and non-selective weed control on agronomic crops and non-crop land and factors affecting control practices
- 242 - Cultural, chemical and biological weed control in the Columbia Basin
- 325 - Absorption translocation, fate, mode of action and soil behavior of certain thiocarbamates
- 358 - Weed control in horticultural crops
- 486 - The control of medusahead on Oregon ranges
- 519 - Metabolism of herbicides and transformation products
- 588 - Chemical brush control: biochemistry and toxic hazard
- 663 - Weed control in the nursery and in ornamental plants



OREGON (cont'd)

10. Miscellaneous - All Other - Federal-grant

- 294 - Limnology and management of Oregon farm fish ponds and small impoundments
- 362 - Vegetation-soil relationships and plant succession on brush-infested ranges in Oregon
- 733 - Removal of pesticide residues from milk

10. Miscellaneous - All Other - Non-Federal

- 105 - Factors affecting the suitability of fruits and vegetables for processing
- 160 - Developing improvement and management practices for semi-arid ranges and foothill pastures
- 658 - Relations of nuisance algae to fish in Klamath Lake



2. Crop Breeding - Federal-grant

- 755 - Breeding disease-resistant varieties of potatoes
- 911-A - Corn breeding
- 1040 - Improvement of wheat, oats, and barley
- 1071 - The genetics of cabbage, Brassica oleracea L. var. capitata L., and methods of breeding the crop
- 1210-A - The breeding and improvement of ornamental shrubs of the Caprifoliaceae
- 1346-D - Control of undesirable plants in forest stands
- 1417 - Breeding sweet corn hybrids adapted to the northeast (NE-32)
- 1423 - The genetics and improvement of perennial forage legumes
- 1508 - Developing improved oat varieties for the northeastern region
- 1516 - The genetics and improvement of perennial forage grasses

2. Crop Breeding - Non-Federal

- 805-A - Evaluation of existing and new types and varieties of Kentucky bluegrass, fescues, and bentgrasses for special purpose turf
- 835 - Variety tests of ornamental plants
- 851 - Breeding cigar leaf tobacco for disease resistance and quality

3. Economics - Federal-grant

- 1536 - Incidence and nature of consumers' reactions to the use of pesticides in producing food products

4. Engineering - Non-Federal

- 1379 - Design of spraying equipment for efficient application of pesticides

5. Entomology - Federal-grant

- 714 - The biology and control of animal pests affecting cultivated mushrooms
- 876 - Chemical studies of plant protectant residues: methods of deposition and removal
- 957 - An investigation of methods for controlling certain insects and mites affecting greenhouse ornamental and vegetable crops
- 999 - Development of new chemicals for use as insecticides, fungicides, bactericides and herbicides
- 1012 - Biology and control of insect pests of cherry
- 1185 - The effects of ovicidal materials upon insect eggs
- 1251 - Insect pests of grapes
- 1255 - Biology and control of insect and related pests of peach
- 1261 - Insect pests of livestock
- 1286 - The physiology and pharmacology of the insect nervous system
- 1490 - Transformations of insecticides by plants (NE-53)
- 1507 - Pesticide residues in or on raw agricultural commodities (NE-36)

5. Entomology - Non-Federal

- 1007 - Control of American foulbrood
- 1077 - An ecological insect survey of Pennsylvania
- 1164-A - Biology and control of the red banded leaf roller, Argyrotaenia velutinana Wlkr., and related species on apple
- 1164-B - Control of mites of economic importance on apple, with special emphasis on the effect of concentrated acaricides on the russetting of apple fruits
- 1457 - Influence of white pine hybridization on olfactory responses of weevils

6. Plant Pathology - Federal-grant

- 645 - Relative effectiveness and safety of fungicides and mixtures that may be used on apples, peaches, and cherries
- 911-B - Disease resistance in corn
- 1147-E - Pathology of wilt disease of trees in the northeast (NE-25)
- 1170-B - The internal-browning disease of tomatoes -- B, the relation of inherent and certain environmental factors to internal browning of tomatoes
- 1365 - Production of antibiotics and plant growth regulators by mycorrhizal fungi
- 1448 - Root and crown diseases of forage legumes (NE-45)
- 1488 - An annual canker of maple
- 1499 - Interactions of Fusarium spp., plant parasitic nematodes, and carbohydrate metabolism in the development of root rot of alfalfa and red clover
- 1511 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)
- 1512 - Virus diseases of deciduous tree fruits and their control (NE-14)

6. Plant Pathology - Non-Federal

- 805-B - Disease control investigations on Kentucky bluegrass, red fescue and bentgrasses
- 811 - Effects of radiation on plants
- 1147-C - Ecological and physiological aspects of oak wilt and its control
- 1325 - Development and maintenance of pathogen-free propagating material of ornamental plants
- 1367 - Ecology of parasitism of fungal plant pathogens
- 1408 - Tomato fruit rots and their control

PENNSYLVANIA (cont'd)

8. Veterinary Science - Federal-grant

1182 - Serological studies of coccidia

9. Weeds - Federal-grant

1346-A - Weed control in agronomic crops

1346-C - Microbiological studies in weed control

1346-E - Weed control in ornamental plantings

1346-F - Weed control in vegetable crops

1357 - Quackgrass, Agropyron repens, its growth and development from underground stems and seeds

1433 - Physical-chemical aspects of persistence and movement of herbicides in soils

1434 - Selectivity and mode of action of herbicidal chemicals

9. Weeds - Non-Federal

1346-B - Weed control in special purpose turf

1346-G - Weed control in fruit crops

10. Miscellaneous - All Other - Non-Federal

1385 - Diseases of warm water fish during transportation and handling

2. Crop Breeding - Federal-grant

- 38 - Sugarcane breeding
- 49 - Tomato breeding
- 62 - Tobacco breeding
- 74 - Coffee breeding in Puerto Rico
- 132 - Development of breeding procedures for selected forage grasses for Puerto Rico, with possible adaptation to the southern region

2. Crop Breeding - Non-Federal

- C 52 - Selection of mango varieties of commercial value
- C 53 - Selection of avocado varieties and types of promising commercial value for study and propagation
- C 151 - An investigation into the agronomic aspects of the pineapple industry of Puerto Rico, or better agronomic practices for the pineapple in Puerto Rico
- C 195 - Comparison of wrapper-tobacco varieties
- C 295 - Wrapper-tobacco breeding
- C 325 - Accelerated program for the production and evaluation of sugarcane seedlings and varieties
- C 337 - Studies of senna (Cassia acutifolia) culture in Puerto Rico

4. Engineering - Non-Federal

- C 273 - The evaluation of various types of portable equipment for the application of agricultural chemicals

5. Entomology - Federal-grant

- 2. - Biology and control of the cedar shoot-borer, Hypsipyla grandella (Zeller)
- 72 - Control of coffee insect pests
- 104 - Determination of pesticide residues on selected Puerto Rican crops (S-22)



PUERTO RICO (cont'd)

- 113 - Biology and control of tobacco insects
- 143 - Control of the sugarcane moth-borer, Diatraea saccharalis (Fabricius) by means of radiation
- 145 - Relative resistance of species and varieties of cottons to pink bollworm in Puerto Rico (S-37)
- 166 - Biology and control of the yellow aphid of sugarcane, Sipha flava Forbes

5. Entomology - Non-Federal

- C 226 - Preservation of timbers against termites and decay of chemicals
- C 238 - Pigeon pea insects and their control
- C 282 - Biology and control of vegetable crop insects
- C 335 - Studies of chromosomal evolution in the insects of Caribbean region

6. Plant Pathology - Federal-grant

- 1 - Diseases of forest trees in Puerto Rico
- 48 - Virus diseases of plants in Puerto Rico
- 63 - Virus diseases of weeds
- 88 - Investigations on the relationship of nematodes to crop production and plant life in Puerto Rico (S-19)
- 123 - The study and control of ratoon-stunting disease of sugarcane in Puerto Rico
- 128 - Serological studies of plant viruses in Puerto Rico

6. Plant Pathology - Non-Federal

- C 236 - Bacterial diseases of plants in Puerto Rico
- C 275 - Coffee wilt control
- C 283 - Reconnaissance survey of sugarcane diseases and insect pests in Puerto Rico
- C 369 - Identification of mosaic virus strains using sugarcane varieties and seedlings as differential hosts



PUERTO RICO (cont'd)

7. Soils - Federal-grant

- 170 - Microbiological studies on pesticide residues in soils of  
Puerto Rico

8. Veterinary Science - Non-Federal

- C 157 - Control of parasites in domestic animals

9. Weeds - Federal-grant

- 144 - Residue analyses of herbicides useful in tropical  
agriculture
- 147 - Climatic and soil factors influencing herbicide activity  
and persistence

9. Weeds - Non-Federal

- C 288 - Control of weeds in Puerto Rico
- C 311 - Investigation of chemical compounds with respect to their  
phytotoxicity

## RHODE ISLAND

### 2. Crop Breeding - Non-Federal

- 215 - Evaluation of chemical and cultural methods for conservation of native orchids

### 5. Entomology - Federal-grant

- 606 - A study of insect resistance exhibited by various insect pests of agricultural crops
- 607 - Insect and other allied pests of forage crops and their control under Rhode Island conditions
- 609 - Pesticide residues in or on raw agricultural commodities (NE-36)

### 5. Entomology - Non-Federal

- 602 - Survey for prevalence of economically important insects in Rhode Island

### 6. Plant Pathology - Federal-grant

- 603 - Turfgrass diseases: their cause, epidemiology and control
- 610 - Pathogenicity of nematodes, their role in root-disease complexes, and effects of chemicals on nematode physiology and toxicology (NE-34)
- 611 - Abnormal physiology and control of vascular wilt diseases of trees (NE-25)
- 617 - Ornamental Prunus spp. as carriers of stone fruit viruses (NE-14)
- 619 - Virus diseases of forage crops; the role of viruses in alfalfa decline
- 620 - Viruses of ornamental nursery crops
- 622 - Root rot of alfalfa; cause and control (NE-45)

### 6. Plant Pathology - Non-Federal

- 601 - Diagnosis and control of dutch elm disease
- 603 - Nursery disease inspection
- 604 - Industrial pest problems

RHODE ISLAND (cont'd)

- 606 - Turfgrass fungicide development
- 612 - Nursery stock diseases
- 613 - Potato late blight appearance and spread in Rhode Island
- 614 - The cell reaction of resistant and susceptible plant varieties to vascular pathogens

9. Weeds - Federal-grant

- 223 - Chemical weed control in potatoes and field corn
- 226 - Control of Poa annua and certain Agrostis species in established stands of lawn and golf course turf
- 228 - Selective chemical control of crabgrass, Digitaria sanguinalis and D. ischaemum and certain broad-leaved weeds in lawn and putting green turf
- 231 - Roadside vegetation investigations

9. Weeds - Non-Federal

- 269 - A study of the herbicide, bandane, as it effects establishment and growth of turfgrasses, and its efficiency in selectively controlling annual grasses

10. Miscellaneous - All Other - Federal-grant

- 518 - Chemical and non-chemical measures for the protection of perishable food commodities in marketing channels (NEM-33)

SOUTH CAROLINA

2. Crop Breeding - Federal-grant

- 60 - Breeding small grains
- 61 - Breeding edible southern peas
- 105 - Breeding bunch grapes for the southeast
- 334 - The development of disease resistant cantaloupe varieties
- 591 - Grain sorghum breeding and performance testing
- 698 - The growth, yield, and fruit quality of pears under various commercial cultural practices in South Carolina

2. Crop Breeding - Non-Federal

- 149 - Hybrid corn breeding and testing
- 155 - Studies with small grains
- 176 - Studies on vegetable culture
- AR 204 - Varietal evaluation of fruits and nuts
- 244 - Sweet potato breeding
- 246 - The development of plum varieties to the coastal plain area
- 311 - Fruit variety and rootstock evaluation
- 326 - Vegetable variety testing and improvement
- 387 - Improvement by breeding of varieties and strains of flue-cured tobacco with desirable growth, quality and resistance to the prevailing diseases
- 418 - Crop variety experiments - small grains, soybeans, alfalfa, winter legumes, pepper, sesame and peanuts
- 552 - A hardwood control demonstration in the South Carolina Piedmont

SOUTH CAROLINA (cont'd)

3. Economics - Federal-grant

- 740 - Economic evaluation of market acceptance of varied grades and qualities of flue-cured tobacco as modified by selected methods of insect control measures

4. Engineering - Non-Federal

- 726 - Effects of soil incorporation on the performance of herbicides

5. Entomology - Federal-grant

- 34 - Insects destructive to forage and pasture plants
- 53 - Determination of pesticide residues in plant and animal products (S-22)
- 65 - Insects affecting man and animals
- 112 - Control of borers attacking peach trees
- 134 - External parasites of poultry, their biology, distribution and control
- 535 - An analysis of the effects of weather and the physical environment on the activity and population level of insects
- 646 - Relation of stinkbug damage to the loss of market value of soybeans and methods for reducing this loss
- 669 - The bionomics, parasites and predators of the Nantucket pine tip moth, Rhyacionia frustrana (Comstock), in South Carolina (S-36)
- 683 - Insects affecting alfalfa (S-55)
- 718 - Biology, control and vector potential of the face fly, Musca, autumnalis DeGeer

5. Entomology - Non-Federal

- 102 - Identification and distribution of economic insects in South Carolina
- 185 - Chemical and biological control of insects other than borers attacking peaches
- 187 - Boll weevil investigations

## SOUTH CAROLINA (cont'd)

- 188 - Tobacco insect investigations
- 189 - Insects on corn and miscellaneous field crops
- 190 - Investigation and control of insects on miscellaneous crops
- 191 - Development of techniques and bio-analysis of insecticides
- 192 - Insecticide leaching tests
- 412 - Evaluation of insecticides
- 459 - Biology and control of certain insects affecting forest trees and unfinished forest products in South Carolina
- 646 - Relation of stinkbug damage to the loss of market value of soybeans and methods for reducing this loss
- 649 - Biology and control of soybean insects
- 652 - The biology and control of insects (pests) that attack ornamental plants, propagated, sold or planted in South Carolina
- 748 - Adult hornworm populations and degree of infestation on tobacco in relation to the community-wide grower use of black light traps

## 6. Plant Pathology - Federal-grant

- 9 - Diseases of small grains
- 64 - Diseases of perennial pasture grasses
- 95 - Diseases of perennial white clovers and methods for their control
- 342 - Identification and control of parasitic nematodes affecting peach trees in South Carolina (S-19)
- 477 - Dissemination, infection and control of the peach bacterial spot pathogen, Xanthomonas pruni
- 695 - Bacterial canker disease of peach and its relationship to southern winter injury



SOUTH CAROLINA (cont'd)

6. Plant Pathology - Non-Federal

- 173 - Comparison of organic bactericides and fungicides for the control of peach diseases
- 174 - Disease control of vegetables
- 178 - Plant disease investigations of cucurbits and other vegetables
- 420 - Diseases of ornamental plants in South Carolina
- 460 - Diseases of forest trees
- 565 - Soil fungi around pine trees attacked by Fomes annosus
- 566 - Bacterial canker and crown rot diseases of peach
- 631 - Soil microorganisms associated with understory vegetation in pine stands
- 665 - Development of a spray program suitable for the control of grape diseases in South Carolina

7. Soils - Federal-grant

- 738 - The disposition of pesticides in the soil (S-62)

8. Veterinary Science - Federal-grant

- 57 - Internal parasites in cattle and sheep in South Carolina
- 651 - Development of the intestinal microflora in chickens and its secondary role in infectious disease

9. Weeds - Federal-grant

- 86 - The effects of certain chemicals upon development of vegetative and reproductive tissues in little barley (Hordeum pusillum) and sandspur (Cenchrus spp) (S-18)
- 90 - A study of the effects of herbicides, fumigants, and plastic mulches on weeds in some ornamental nursery stock
- 100 - Use of growth regulating substances for weed control
- 573 - The fate of herbicides in coastal plain and piedmont soils as influenced by fertilization and liming practices

SOUTH CAROLINA (cont'd)

- 634 - Chemical control of weeds in soybeans
- 684 - Evaluation of herbicides for vegetable production and their influence on the physiology of vegetable crops

9. Weeds - Non-Federal

- 278 - Value of pre-emergence herbicides for cotton, soybeans, and peanuts

10. Miscellaneous - All Other - Federal-grant

- 749 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

10. Miscellaneous - All Other - Non-Federal

- 295 - Development of more adequate tobacco plant bed management procedures

## SOUTH DAKOTA

### 2. Crop breeding - Federal-grant

- 25 - Breeding and testing of oats, flax and rye for South Dakota conditions
- 49 - Production and breeding of early, drought and disease resistant, high quality tomatoes for home use
- 66 - The breeding of superior field corn hybrids
- 118 - Modification of wind and temperature to improve vegetable yields and quality
- 148 - The breeding and testing of soybeans, sunflower, safflower, and castor beans for South Dakota
- 174 - The collecting, preserving, cataloging, propagating and testing of fruit plants having potential genetic value (NC-7)
- 181 - Breeding and testing wheat

### 2. Crop Breeding - Non-Federal

- 303 - Breeding and testing of barley for South Dakota and upper Midwest conditions

### 5. Entomology - Federal-grant

- 288 - Investigations of the alfalfa insect situation in South Dakota
- 311 - Investigations of the spotted alfalfa aphid in South Dakota
- 374 - The character, magnitude and persistence of insecticides used in alfalfa insect control in the northern Great Plains (NC-33)
- 399 - Study of the distribution of mosquito species in South Dakota with special reference to the distribution, ecology and control of Culex tarasalis Coq., a vector of western equine encephalitis

### 5. Entomology - Non-Federal

- 244 - Investigations to develop a systemic chemotherapeutic method of controlling cattle grubs
- 433 - A study of the distribution of phytophagous mites in South Dakota with special reference to species of agricultural importance
- 434 - Investigations in the ecology and control of the western and northern corn rootworm in South Dakota

SOUTH DAKOTA (cont'd)

6. Plant Pathology - Federal-grant

- 230 - Investigations and control of alfalfa and other forage legume diseases
- 296 - Seed treatment and soil amendmets for the control of seed rot and seedling blight
- 343 - The selection of superior virus-free or virus tolerant plum rootstocks
- 352 - Pythium and Ophiobolus graminis root rots of cereals
- 353 - Diseases of spring, winter and durum wheats and their control
- 386 - Pathogenicity and control of common scab and bacterial ring rot of potato
- 389 - Epiphytology and control of cereal and legume viruses
- 390 - The role of fungus diseases in the lodging of sorghum
- 425 - Mechanisms of survival of root-infecting fungi in soil (NC-70)

6. Plant Pathology - Non-Federal

- 185 - Corn diseases and their control
- 250 - The biology and control of the important grass diseases of South Dakota
- 276 - Flax diseases and their control
- 283 - Diseases of oats and their control
- 292 - Control of diseases affecting shelterbelt, forest and shade trees in South Dakota
- 375 - Nematode diseases of plants and their control

8. Veterinary Science - Federal-grant

- 260 - The life history, distribution and control of the fringed tapeworm of sheep in South Dakota

SOUTH DAKOTA (cont'd)

9. Weeds - Federal-grant

32 - Weeds and weed control (NC-10)

387 - Nature and extent of competition between wild buckwheat and small grain (NC-61)

10. Miscellaneous - All Other - Federal-grant

438 - Relationship of insecticides to pheasants in South Dakota



2. Crop Breeding-Federal-grant

- 34 - Corn Improvement
- 37 - Production of Burley Tobacco
- 39 - Improvement of cultivated grasses
- 117 - Screening pear seedlings for fireblight resistance
- 127 - Fruit variety investigations
- 132 - Breeding disease-resistant tobacco
- 167 - Breeding tomatoes for Tennessee markets with emphasis on earliness and disease resistance
- 174 - Breeding strawberries for Tennessee markets with emphasis on climatic adaptability and disease resistance
- 208 - Breeding for improvement in small grains (wheat, oats, barley, and rye)

3. Economics - Federal-grant

- 236 - The marketing and utilization of pesticides in Tennessee

5. Entomology - Federal-grant

- 49 - Determination of pesticide residues on selected Tennessee crops (S-22)
- 96 - Insects affecting alfalfa (S-55)
- 98 - Life, history, ecology, and control of major cotton insects
- 203 - Control of insects attacking nursery plants
- 213 - Biology, distribution, and control of corn insects

5. Entomology - Non-Federal

- 21 - Evaluation of new insecticides

6. Plant Pathology - Federal-grant

- 135 - Control of cotton verticillium wilt
- 138 - Biology and control of plant parasitic nematodes (S-19)



TENNESSEE (cont'd)

139 - Associations among soil microorganisms as related to the incidence and severity of plant diseases (S-26)

140 - Evaluating new fungicides

7. Soils - Federal-grant

237 - The disposition of pesticides in the soil (S-62)

241 - The disposition of pesticides in the soil (S-62)

8. Veterinary Science - Federal-grant

194 - Secondary infections from intestinal bacterial microflora

9. Weeds - Federal-grant

32 - Chemical weed control

45 - Movement and persistence of herbicides in the soil (S-18)

10. Miscellaneous - All Other - Federal-grant

235 - Chemical residues in milk

242 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

TEXAS

1. Animal Science - Federal-grant

1560 - Insecticide residues in poultry and eggs

2. Crop Breeding - Federal-grant

387 - Improvement of forage grasses

460 - Legume improvement

489 - The breeding and improvement of spinach varieties including resistance to diseases

554 - Breeding tomatoes for resistance to diseases

569 - Improvement of peanuts through breeding and selection

902 - Control of weeds and improvement of grasses on ranges in West Texas

1026 - Breeding commercial shipping and canning varieties of tomatoes for south Texas

1103 - Development of shipping type cantaloupes for different regions in Texas and in other production areas of the nation

1180 - Improving efficiency in production of cucumbers and watermelons through the development of varieties of restricted vine type adapted to use of modified cultural practices

1280 - Improvement and inheritance in corn

1281 - Investigations of short stature small grains for high production levels

1282 - Genetics and improvement in wheat

1285 - Genetics and improvement of barley

1286 - Genetics and improvement of oats

2. Crop Breeding - Non-Federal

S-684 - Breeding tomatoes for late summer and fall production

S-754 - The breeding and improvement of onion varieties and/or hybrids for Texas, including resistance to diseases and insects

## TEXAS (cont'd)

- S-979 - Varietal adaptability and disease resistance of vinifera grapes and grape rootstocks in south Texas
- S-1028- Flax improvement
- S-1069- Development of improved varieties of American Upland cotton for the Trans-Pecos Area of Texas
- S-1098- Improvement of the oilseed crops, sesame, castorbeans and sunflowers, and other special crops
- S-1146- The determination of factors which affect quality of seed and standardization procedures for determining quality
- S-1169- The evaluation of certain breeding lines and varieties of vegetables for yield, quality and disease resistance on Hockley fine sandy loam soil
- S-1217- The evaluation, breeding and improvement of lettuce varieties for Texas
- S-1244- The effects of various pre-harvest cultural practices and post-harvest treatments on sweet potato production and market acceptance
- S-1313- Resistance of vegetable varieties to insects
- S-1347- Development of improved varieties of American Egyptian cotton (Gossypium barbadense) for the Southwest
- S-1348- Performance of Upland cotton varieties of several types under varying seasonal conditions and cultural practices in the trans-pecos area

### 4. Engineering - Federal-grant

- 722 - Application of chemicals for insect control in cotton (S-2)

### 5. Entomology - Federal-grant

- 790 - The mechanism of action of metabolic inhibitors on the growth, development, reproduction and cellular reactions of insects
- 929 - The biology and control of insects and mites attacking forage crops (S-25)
- 933 - The effect of ecological and physiological factors on the response of insects to insecticides

## TEXAS (cont'd)

- 934 - Treatment schedules for control of insects attacking cotton
- 1020 - The biology and control of insects and mites attacking small grains
- 1094 - Forecasting and controlling pink bollworm outbreaks (S-37)
- 1270 - Population dynamics of cotton insects subjected to insecticidal treatments
- 1301 - Development of a cultural and chemical control program for eradication of the boll weevil
- 1517 - Evaluation and development of southernpeas, lettuce and peppers for resistance to insects
- MS-1525 - Development of diets and rearing methods for studying the effects of certain environmental factors on the biology of the southern pine beetle
- 2221 - Agricultural chemical residues in plant and animal products (S-22)
- 2431 - Mechanisms by which the boll weevil and other arthropods become resistant to chemicals and means for coping with the problem (S-43)
- 2591 - Factors affecting the distribution, abundance, and control of Heliothis spp. in cotton (S-59)

## 5. Entomology - Non-Federal

- S-224 - Hibernation of the cotton fleahopper and the boll weevil
- S-652 - Collection, classification and recording of the insects of Texas with special reference to economically important forms
- S-670 - A determination of the degree of damage done to grasses by rhodes-grass scale and further evaluations of Dusmetia sangwani Pao as a controlling agent of Antonina graminis (Maskell)
- S-811 - The development of petroleum oils as selective pesticide on citrus
- S-831 - Biology and control of vegetable insect and mite pests
- S-838 - Rice insect control in the Gulf Coast area



## TEXAS (cont'd)

- S-848 - The biological control of citrus insects in the lower Rio Grande Valley
- 893 - Environmental factors favoring the abundance of the pink bollworm and the bollworm
- S-970- Biology and control of insects, ticks and mites that affect animals
- S-1046- The biology and control of fruit and pecan insects
- S-1161- Mites of citrus and their control
- S-1192- Insect transmission of a new virus disease of cotton in Texas
- S-1276- Biology and control of stored grain insects
- S-1312- Control of several early-season cotton pests with insecticides in the lower Rio Grande Valley
- S-1330- Studies with systemic insecticides as related to cotton insect control
- S-1331- Field effectiveness of chemicals for control of cotton insects
- 1450- Biology, ecology and control of the sorghum midge, Contarinia sorghicola (Coquillett) on grain sorghum
- 1521- Investigation of pesticide drift in the lower Rio Grande Valley of Texas

## 6. Plant Pathology - Federal-grant

- 605 - Diseases of peanuts in Texas
- 944 - Bionomics and control of plant parasitic nematodes in Texas (S-19)
- 990 - The seedling disease complex of cotton
- 1007 - The influence of physiological factors on the expression of parasitic diseases of cotton
- 1102 - Biological and chemical factors influencing the cotton root rot fungus, Phymatotrichum omnivorum
- 1108 - The detection and identification of plant viruses and their arthropod vectors

## TEXAS (cont'd)

- 1114 - Physiology of rust resistance in wheat and oats
- 1300 - The relation of soil microorganisms to the control of the seedling disease complex of cotton in Texas (S-26)
- MS-1526 - Etiology and control of live oak decline
- 2191 - Factors influencing survival and pathogenicity of plant parasitic nematodes (S-19)

### 6. Plant Pathology - Non-Federal

- S-421 - The control of foliage diseases of potatoes, and other vegetables by spraying with bordeaux mixture and copper-containing bordeaux substitutes and other fungicides, both liquid and dust
- S-582 - Resistance of cotton to angular leaf spot or bacterial blight
- S-703 - Development and maintenance of a source of citrus budwood free of virus diseases
- S-757 - Control of tomato diseases by chemical and cultural methods
- S-847 - Evaluating chlorobromopropene for control of soil borne diseases of cotton
- S-983 - Epidemiology and control of cereal rust under Texas conditions
- S-1064 - Rice disease investigations
- S-1167 - Fungus diseases of citrus in south Texas and their control
- S-1247 - Etiology and control of small grains and sorghum diseases other than smuts and rusts in Texas
- S-1295 - Etiology and control of tomato fruit rot disease
- 1335 - Mechanisms of escape and/or resistance to the phymatotrichum root rot disease of cotton
- 1356 - Etiology and control of live oak decline

### 7. Soils - Federal-grant

- 2621 - The disposition of pesticides in the soil (S-62)



TEXAS (cont'd)

8. Veterinary - Federal-grant

697 - The efficacy and toxicity of various chemicals and formulations used as anthelminitics in farm animals

1104- Management of cattle as related to parasite fauna and parasitic infections in Texas (S-21)

8. Veterinary Science - Non-Federal

S-708- Gastrointestinal parasite control of sheep and goats

S-1205- A method of raising disease-free swine

9. Weeds - Federal-grant

608 - Distribution, abundance, economic importance and control of bitter-weed, mescal bean, broomweed, and rayless goldenrod on Texas range lands

686 - Control of field bindweed (Convolvulus arvensis) and blueweed (Helianthus ciliaris) and similar broadleaf weeds in the sub-humid farming areas of Texas

794 - Control of johnson grass and annual grasses in Texas

919 - Determination of cause and control of poisoning in cattle by shin  
Supp 1 oak (Quercus havardi)

1322- The relationship of environmental variables to the growth and development of mesquite, Prosopis juliflora var. glandulosa (Torr.) Cockr (CRF-1)

1323- Absorption, translocation and metabolism of herbicides by mesquite and oak seedlings

1325- Determination of factors affecting the competitive ability of weeds in semi-arid areas

1326- The efficiency of herbicides in irrigated soils as related to methods of application

1327- An economic evaluation of brush control on ranges and pastures in selected areas

2181- Growth habits, spread and herbicidal responses of trumpet creeper (S-18)

TEXAS (cont'd)

9. Weeds - Non-Federal

- S-915- Weed control in Texas crops
- S-1203- Effects of brush control on wildlife in the Rio Grande Plains
- S-1216- Weed control in rice fields and pasture lands in the gulf coast area
- S-1291- Vegetation control on Texas highways
- 1509- An evaluation of spray characteristics and effectiveness of herbicides applied as water-in-oil emulsions with the bifluid system

10. Miscellaneous - All Other - Federal-grant

- 1194- Physiological factors involved in reaction of cotton to insect attack and insecticide application
- H-1560- Insecticide residues in poultry and eggs
- HM-2323- Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products

10. Miscellaneous - All Other - Non-Federal

- S-614- Control of noxious brush on Texas rangelands
- S-1332- Harvest-aid chemical residues in cottonseed
- 1513- The relationship of hardwood species to productivity and population levels of fox squirrels in pine-hardwood and hardwood types in east Texas
- 1522- Ecesis and stabilization of pricklypear (Opuntia spp.) on the Rio Grande Plains
- 1531- Yaupon and winged elm control for management of native grasslands in the post oak-black-jack oak areas of Texas
- 1533- Control methods for the management of areas infested with Macartney Rose, Rosa Bracteata.

2. Crop Breeding - Federal-grant

- 328 - Improvement of fall-sown wheat through breeding
- 330 - Breeding for resistance to curly top of tomatoes
- 614 - Effects of certain chemicals, hydro-cooling, and packaging methods on the storage life, biochemical changes, and consumer acceptance of fresh fruits and vegetables

2. Crop Breeding - Non-Federal

- 329 - Testing, improvement, and genetic investigations of spring wheat, spring and winter barley
- 340 - Variety testing of orchard fruits and nuts
- 342 - Breeding tomatoes for Utah with resistance to verticillium wilt and other diseases
- 367 - Alfalfa varietal evaluation
- 385 - Lima bean improvement
- 428 - Cultural practices and variety testing of small fruits
- 474 - Safflower breeding, production, and diseases

5. Entomology - Federal-grant

- 431 - The control of mites and insects on fruit trees
- 480 - Resistance of species, varieties, strains, and clones of alfalfa to seed chalcids (W-74)
- 603 - Factors influencing tissue storage of certain pesticide chemicals in (meat) animals (W-45)
- 660 - Biochemical constituents of selected alfalfa clones as related to their resistance to the alfalfa seed chalcid and alfalfa weevil

5. Entomology - Non-Federal

- 51 - Miscellaneous insect investigations
- 326 - Sugar beet insect investigations
- 327 - Tomato and corn insect investigations

## UTAH (cont'd)

- 431 - The biology and control of mites and insects on fruit trees
- 433 - Insect pollination of vegetable crops
- 532 - Insect collection and its maintenance
- 590 - The effects of X-irradiation on the embryos of invertebrate animals
- 610 - Pesticides in relation to insect pollinators of agricultural crops
- 622 - The alfalfa weevil

### 6. Plant Pathology - Federal-grant

- 466 - The nature and behavior of stone-and pome-fruit viruses in vivo and in vitro (W-64)
- 582 - The biology of certain nematodes associated with root diseases of declining stone fruits (W-56)

### 6. Plant Pathology - Non-Federal

- 34 - Plant disease survey
- 557 - Radiation safety committee
- 582 - The biology of certain nematodes associated with root diseases of declining stone fruits
- 601 - Spectral analysis of plant virus infection
- 671 - Virus and virus-like diseases of stone and pome fruits

### 7. Soils - Federal-grant

- 678 - Soils, pesticides, and the quality of water (W-82)

### 8. Veterinary Science - Federal-grant

- 452 - Trichomoniasis, coccidiosis, and other protozoan diseases of livestock in Utah
- 517 - Immunology of ostertagiasis in cattle (W-35)

### 9. Weeds - Federal-grant

- 159 - Control and eradication of weeds
- 505 - Control of weeds in horticultural crops

UTAH (cont'd)

9. Weeds - Non-Federal

419 - Physiology, ecology, and chemical control of poisonous range  
weeds

10. Miscellaneous - All Other - Non-Federal

556 - Grazing and livestock management of reseeded abandoned farm  
and depleted range lands



2. Crop Breeding - Federal-grant

- 60 - Strawberry breeding and variety trials

2. Crop Breeding - Non-Federal

- 62 - Variety trials with horticultural crops
- 91 - Lawn and turf grasses - their establishment, maintenance and evaluation

5. Entomology - Federal-grant

- 2 - The effect of leader damage on the growth of planted conifers
- 43 - Forage crop insects, their relative importance and control
- 124 - Pesticide residues on forage resulting from drift of dusts applied to adjacent orchards

6. Plant Pathology - Federal-grant

- 37 - Sexual process of the life cycle of Sclerotinia trifoliorum
- HA-112 - The biogenesis and characterization of a new naphthoquinone produced by the fungus Lambertella hickoria Whetzel
- 134 - Identification of virus diseases in deciduous fruit trees in Vermont

9. Weeds - Federal-grant

- 145 - Chemical weed control in turf as affected by management practices

10. Miscellaneous - All Other - Federal-grant

- 99 - Trefoil persistence studies
- 151 - Chemical and non-chemical measures for the protection of perishable food commodities in marketing channels (NEM-33)

10. Miscellaneous - All Other - Non-Federal

- 60 - Adaptation of new crops, small grains, forage seedings and weed control



## VIRGINIA

### 2. Crop Breeding - Federal-grant

- 86003 - Breeding new varieties of apples especially adapted to conditions in Virginia
- 86004 - Breeding new varieties of peaches and nectarines especially adapted to conditions in Virginia
- 86018 - Breeding tobacco for disease resistance
- 86041 - Development and selection of adapted corn inbreds and hybrids
- 86052 - Development of oat varieties adapted to the coastal plains region of Virginia

### 2. Crop Breeding - Non-Federal

- S-023      The development and evaluation of superior disease-resistant  
-8           varieties of wheat, oats and barley
- S-023 - Development of improved varieties of alfalfa  
-11
- S-023 - Developing and evaluating new and improved varieties of soybeans  
-13
- S-023 - Developing and evaluating new and improved varieties of  
-15       peanuts
- S-023 - Tobacco breeding and testing  
-34
- S-030 - Powdery mildew resistance in winter-type muskmelons  
-B3
- S-030 - Land cress culture, weed and pest control  
-B6

### 5. Entomology - Federal-grant

- 86054 - Seasonal occurrence, habits and control of insects attacking flue-cured tobacco
- 86055 - Insects affecting alfalfa (S-55)
- 86059 - Genetical and biological studies of resistance in the German cockroach and the large milkweed bug

## VIRGINIA (cont'd)

- 86070 - Life history, behavior and control of insects of livestock and poultry
- 86105 - Seasonal history, habits, and control of insects affecting peanuts and soybeans
- 86132 - An ecological study of the insects affecting red clover and birdsfoot trefoil
- 86136 - Seasonal development and control of insects affecting the production of stone fruits
- 86146 - Ecology and natural control of the Nantucket pine tip moth, Rhyacionia frustrana (comstock), and related species
- 93906 - Standardization and adaptation of pesticide residue chemical assay methods for plant and animal products (S-22)

### 5. Entomology - Non-Federal

- S-027 - Effect of radiant energy on insects  
-11
- S-030 - Factors affecting infestation of processing tomatoes with  
-D3 Drosophila spp. and their control
- S-038 - Seasonal development, habits, and control of certain insects  
-2 attacking corn above ground
- S-038 - Field evaluation of new insecticides and acaricides for use  
-9 on deciduous fruit trees
- S-038 - A study of the parasites of the pine sawfly, Neodiprion pratti  
-10 pratti
- S-038 - Insecticidal residues in milk and tissues of cows fed  
-11 insecticides or insecticide-treated forage crops
- S-038 - Ecological and distributional studies of insects of economic  
-12 importance in Virginia
- S-038 - Mite infestations on apple foliage in relation to yield and  
-13 fruit finish
- S-038 - The importance, habits and control of pasture and meadow  
-14 insects in Virginia

## VIRGINIA (cont'd)

- S-038 - Biochemical properties of insect flight muscle  
-15
- S-038 - Taxonomy and morphology of the scale insects of Virginia,  
-17 with special emphasis on the genus Antonina
- S-038 - Nutritional requirements of insects affecting tree fruits  
-18
- S-050 - Studies of aquatic and semi-aquatic diptera, with special  
-5 reference to the Ephydriidae and Sciomyzidae
- S-050 - Systematic and anatomical studies of the Arachnida  
-7
- S-050 - Studies on the genetics of natural populations, with  
-17 reference to industrial melanism and the evolution of  
small populations in the Lepidoptera

### 6. Plant Pathology - Federal-grant

- 86013 - Investigation of some aspects of the etiology and control  
of tobacco root rot disease complexes
- 86014 - The nature, cause and control of the diseases of pasture  
and forage legumes
- 86057 - Diseases of barley, oats, and wheat and breeding of disease-  
resistant varieties
- 86058 - Pathologic, physiologic, and genetic investigations of corn  
diseases
- 86066 - The nature, cause and control of the diseases of pasture,  
forage and turf grasses
- 86133 - The pome fruit virus diseases in Virginia
- 93904 - Factors influencing survival and pathogenicity of plant  
parasitic nematodes (S-19)

### 6. Plant Pathology - Non-Federal

- S-023 - Internal damage in Virginia-type peanuts  
TW-3
- S-023 - Grasses and legumes for lawns, playgrounds, roadsides, golf  
-41 courses, and other turf uses

VIRGINIA (cont'd)

S-035 - Fruit diseases

-1

S-035 - Bean diseases

-2

S-035 - Tomato diseases

-3

S-035 - Diseases of tree fruit

-6

S-035 - Ecology of the black-shank disease of tobacco

-7

S-035 - Studies on the control and inheritance of resistance in  
-8 tobacco to the tobacco ringspot virus and other viruses  
of tobacco

S-035 - Diseases of ornamental plants

-10

S-036 - Soybean cyst nematode investigations

-1

S-050 - The degradation of plant and animal tissue by fungi

-6

S-050 - Growth in mixed cultures of microorganisms

-19

8. Veterinary Science - Federal-grant

86114 - A study of the effect of environmental factors on the  
parasites of sheep and cattle in Virginia

9. Weeds - Federal-grant

86067 - Weed control in field crops

86068 - Control of undesirable woody plants and weeds in forest,  
pastures and non-crop areas

86073 - Chemical weed control in corn and alfalfa

86129 - The occurrence and control of undesirable plant species  
growing in nurseries, ornamental plantings and turf

VIRGINIA (cont'd)

86142 - Weed control in fruit and vegetable crops

93903 - The effect of selected soil-applied herbicides on the germination of certain weed seeds (S-18)

9. Weeds - Non-Federal

S-035 - Control of undesirable aquatic plants in Virginia waters  
-12

10. Miscellaneous - All Other - Federal-grant

86149 - Cleaning vegetables prior to marketing

93918 - Reduction or elimination in commercial channels of adverse effects of pesticide residues on food and feed products (SM-32)

10. Miscellaneous - All Other - Non-Federal

S-030 - Mouse control in orchards  
-A2

S-030 - Influence of spray chemicals on apple foliage and fruit  
-A11



## WASHINGTON

### 2. Crop Breeding - Federal -grant

- 1017 - Breeding for curly top resistance in vegetable crops
- 1453 - The selection and testing of potato varieties

### 2. Crop Breeding - Non-Federal

- 175 - Evaluation of cereal varieties in Washington
- 958 - Breeding better strawberry varieties
- 959 - Breeding better raspberry varieties
- 1006 - Barley breeding
- 1073 - Breeding superior stone fruit varieties for the pacific northwest
- 1385 - Internal blackspot of potatoes
- 1471 - Breeding potatoes to combine disease resistance with desirable horticultural characters
- 1538 - Turfgrass management
- 1568 - Development of genetic methods for wheat improvement
- 1570 - Development of improved spring wheat
- 1605 - Small fruits culture in southwestern Washington
- 1627 - Small fruit variety testing and evaluation in eastern Washington
- 1628 - Cultural studies of Concord grapes
- 1636 - Evaluation of forage varieties in Washington
- 1667 - Development of winter wheat varieties for low rainfall areas of eastern Washington
- 1742 - Evaluation of new varieties and cultural methods of selected small fruit and vegetable crops for western Washington
- 1769 - Rhubarb breeding and cultural investigations in western Washington



5. Entomology - Federal-grant

- 1127 - Improving grain marketability by controlling stored grain insects with aeration, fumigants, protective treatments, and by reducing kernel fracturing (WM-16)
- 1633 - Chemical control of seed chalcids and methods of detecting chalcid infestations (W-74)
- 1643 - Specificity of phosphate insecticides
- 1644 - Equilibrium studies with chymotrypsin
- 1793 - Physical methods of identification and determination of pesticides and their degradation products

5. Entomology - Non-Federal

- 848 - Relation of insects to the transmission of fruit tree viruses
- 862 - Biology and control of insects attacking the strawberry in western Washington
- 1090 - The biology and control of insects and mites attacking stone fruits
- 1127 - Improving grain marketability by controlling stored grain insects with aeration, fumigants, protective treatments and by reducing kernel fracturing
- 1346 - Control of insects attacking vegetables
- 1368 - Biology and control of symphylids
- 1370 - Biology and control of insects attacking ornamental plants in western Washington
- 1371 - Biology and control of insects attacking cane fruits in western Washington
- 1419 - Causes and prevention of bee poisoning by chemicals in Washington
- 1434 - Importance of Phlebotomus and other biting arthropods
- 1477 - Bionomics and control of insect and mite pests of apple
- 1531 - Bionomics and control of insect and mite pests of pear

## WASHINGTON (cont'd)

- 1557 - Aphid transmission of strawberry viruses and prevention of their dissemination through vector control
- 1592 - Photoperiodic responses in mosquitoes and other insects
- 1610 - Biology and control of the European pine shoot moth, Ryacionia buoliana (Schif.), in Western Washington
- 1633 - Chemical control of seed chalcids and methods of detecting chalcid infestations
- 1683 - Corn earworm control
- 1686 - The control of slugs
- 1699 - Identification and mechanism of action of pear psylla toxins
- 1732 - Insect pests of currants
- 1765 - Insect pests of grapes
- 1802 - Insect behavior
- 1803 - Forest insects

## 6. Plant Pathology - Federal-grant

- 1262 - Obtaining and preserving virus-free deciduous tree fruit stocks (IR-2)
- 1465 - The nature of resistance to the virous leafroll disease in potatoes
- 1576 - The interrelation of nematodes and other pathogens in plant disease (W-56)
- 1674 - The life cycle of Cephalosporium gramineum, the influence of organic soil amendments on its survival in soil, and a search for resistance in winter wheat to it (W-38)
- 1719 - Identification, etiology and control of virus diseases of deciduous fruit trees (W-64)
- 1736 - Studies on the effect of carbon dioxide inhibition of microbial growth
- 1770 - Development and pathogenicity of Hypoxyylon fuscum on northwestern species of alder (Alnus)

6. Plant Pathology - Non-Federal

- 796 - Control and biology of snow molds of winter wheat
- 865 - Biochemistry and physiology of plant virus diseases
- 867 - Diseases of cranberries
- 1158 - Diseases of blueberries
- 1167 - Diseases of ornamental shrubs in western Washington
- 1379 - The etiology of virus-like diseases of hops and their control
- 1381 - Soil-borne diseases of hops, their etiology and control
- 1394 - Cause and control of turf diseases in Washington
- 1457 - Chemical control of wheat smut and factors influencing infection
- 1459 - The pathogenicity and control of the causal organism of onion smut, Urocystis colchici
- 1470 - Diseases of vegetable crops in western Washington
- 1494 - The winter biology of Puccinia striiformis in the Pacific Northwest
- 1509 - Chemical properties of organo-metallic fungicide used to control plant diseases
- 1512 - Diseases of ornamental bulb crops
- 1535 - Diseases of strawberries in western Washington
- 1536 - Diseases of raspberries in western Washington
- 1561 - Etiology and control of strawberry root rots
- 1562 - Etiology and control of pea root rot in northwest Washington
- 1576 - Pathogenicity and control of nematodes associated with mints in south central Washington
- 1577 - Laboratory culture of plant parasitic nematodes
- 1584 - The use of radio frequency energy as a tool in plant disease control

WASHINGTON (cont'd)

- 1593 - Etiology and epidemiology of species of Chrysomyxa attacking rhododendrons in the Pacific Northwest
- 1638 - Mutagens from plant sources as antiviral agents
- 1656 - The isolation, purification, and measurement of the antibiotic phytoactin, or its derivatives from treated plant tissues
- 1671 - The pathology and control of onion white rot
- 1687 - Determination of resistance and susceptibility of wheats to foot rot
- 1696 - The effect of timing, rate, source, and method of fertilizer applications on the incidence of foot rot in wheat
- 1709 - The biology and control of economically important soil infesting potato pathogens
- 1719 - Identification, etiology and control of viruses in deciduous tree fruits
- 1721 - The cause, epidemiology and control of crucifer diseases in western Washington
- 1723 - The biology and physiology of Polyporus volvatus
- 1735 - Ecology and control of nematodes associated with mushrooms
- 1739 - Life cycles of ascomycetes with special emphasis on cytological aspects
- 1786 - The etiology, epiphytology and control of cucurbit diseases in western Washington

7. Soils - Federal-grant

- 1811 - Soils, pesticides and the quality of water (W-82)

8. Veterinary Science - Federal-grant

- 1240 - In vitro and in vivo studies of Haemonchus placei infection in sheep (W-35)

9. Weeds - Federal-grant

- 1479 - Perennial weed control related to crop production in eastern Washington
- 1634 - Investigation of residues of weed control chemicals and their conversion products in soils
- 1795 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

9. Weeds - Non-Federal

- 1123 - Weed control in crop lands of western Washington
- 1423 - Chemical weed control in ornamentals in western Washington
- 1460 - Weed control in cranberries and blueberries
- 1474 - Annual weed control in cropland of eastern Washington

10. Miscellaneous - All Other - Federal-grant

- 1508 - Competitive relationships among cheatgrass (Bromus Tectorum L.) bluebunch wheatgrass (Agropyron spicatum (Pursh.) Scrib) and other important perennial grasses of the Columbia basin



2. Crop Breeding - Federal-grant

- 29 - Corn genetics and breeding
- 108 - The production of burley tobacco

5. Entomology - Federal-grant

- 62 - The symbiotic relationships between microorganisms and insect vectors of plant diseases
- 63 - The structure and function of specialized tissues in insects
- 79 - The control of livestock pests in West Virginia
- 80 - Cereal and forage crop pests - their distribution, incidence and control in West Virginia
- 194 - The biology and control of insects and nematodes affecting forest tree plantations in West Virginia

6. Plant Pathology - Federal-grant

- 14 - Decay as a factor in sprout reproduction of yellow poplar
- 51 - Factors influencing losses from root rots of forage legumes (NE-45)
- 57 - Pathology of the wilt disease of trees in the northeast (NE-25)
- 72 - Physiology and biochemistry of nematode and nematode-host relationships (NE-34)
- 78 - Diseases of forage grasses
- 192 - Physiology and genetics of fungi
- 193 - Host-parasite interrelationships of diseases of vegetable crops with emphasis on those caused by species of Phytophthora

9. Weeds - Federal-grant

- 116 - Effects of herbicides on tree fruits and small fruits
- 128 - The life cycles of yellow rocket (Barbarea vulgaris) as related to its control as a weed (NE-42)
- 161 - Physiological responses of weed and crop plants to herbicides
- 169 - The control of weeds for pasture and forage production



1. Animal Science - Federal-grant

- 1298 - Effect of insecticides on reproductive efficiency of Coturnix quail

2. Crop Breeding - Federal-grant

- 309 - The development of superior strains of hybrid field corn
- 321 - Alfalfa breeding
- 530 - Barley improvements with emphasis on malting types
- 566 - The improvement of quality and disease resistance of the potato and methods of accomplishing this by breeding (NC-35)
- 800 - Introduction, preservation, classification, distribution and preliminary evaluation of wild and cultivated species of solanum (IR-1)
- 993 - Maintaining barley quality during storage and shipment
- 1025 - Vegetable crops improvement through breeding

2. Crop Breeding - Non-Federal

- 15 - Evaluation of certain factors affecting yield and quality of tobacco
- 18 - Breeding of tobacco for improved quality and disease resistance
- 38 - Red clover and sweetclover breeding
- 64 - Breeding of peas for canning and freezing
- 65 - Breeding of small grains and flax
- 557 - Development and evaluation of improved varieties of grasses and miscellaneous legumes

3. Economics - Federal-grant

- 1302 - The communications pattern among rural Wisconsin residents on several aspects of pesticide use

5. Entomology - Federal-grant

- 725 - The relation of leafhoppers and aphids to the transmission of vegetable crop viruses
- 822 - Biological activity of insecticidal derivatives
- 897 - Fundamental problems associated with the accumulation of pesticidal chemicals in soils (NC-19)
- 897a - Interrelationships between soil insecticides and soil micro-organisms (NC-19)
- 980 - Chemical nature and mechanism of loss of insecticide residues on or in food, feed and forage crops (NC-33)
- 1202 - Culture methods for insects attacking vegetable crops
- 1245 - Migration of aphids and noctuids (NC-67)
- 1259 - Bionomics of the cereal leaf beetle (NC-73)
- 1263 - Population dynamics of sawflies associated with coniferous plantations

5. Entomology - Non-Federal

- 154 - Biology and control of insects on forage crops and canning peas
- 309e - Development of strains resistant to corn borer and earworms
- 418 - Truck crop and potato insects and their control
- 467 - Fruit insects and mites
- 633 - Insects affecting man and domestic animals
- 648 - Biology and control of pest insects on cereal crops
- 790 - Physiological studies on insects
- 840 - Survey of insects of potential economic importance in Wisconsin
- 961 - Effects of certain insect toxins on cell hypertrophy
- 1004 - Biology, habits and control of insects which affect the production of Cacao theobroma

## WISCONSIN (cont'd)

- 1005 - Insects associated with Wisconsin trees (faunistic studies & classification)
- 1006 - Biological-ecological investigations of insects attacking forest trees, and their control through silvicultural means
- 1030 - Biological factors in the management of lake flies
- 1041 - Dutch elm disease and its control
- 1043 - Biological control of forest insect pests
- 1091 - Biology and control of termites in Wisconsin
- 1127 - Systemic chemical control of tree and shrub insects
- 1249 - Effect of pesticides on wildlife, including songbirds, herring gulls and fish

### 6. Plant Pathology - Federal-grant

- 232 - Fundamental researches on bacterial diseases of beans and peas
- 269 - Disease resistance in plants
- 301 - Scab, fireblight, and rust of apples, leaf spot and brown rot of cherries
- 904 - Nematode diseases of potato and other crops
- 981 - Diseases of ornamental plants
- 1026 - Poplar diseases and disease resistance
- 1083 - Stone fruit virus diseases and their control (NC-14)
- 1225-A- Nature and control of diseases of lettuce on muck soils
- 1264 - Vascular wilt diseases of forest trees: (a) The oak wilt disease, its development, spread, and control
- 1264 - Host-parasite interactions in oak wilt development
- 1281 - Mechanisms of survival of root-infecting fungi in soil (NC-70)
- 1293 - Virus diseases of deciduous tree fruits and their control (NE-14)

6. Plant Pathology - Non-Federal

- 118 - Cabbage diseases: yellows, mosaic, tip burn, clubroot, black rot and black leg
- 120 - Canning pea diseases: wilts, root rot, virus diseases and leaf blights
- 232 - Diseases of canning beans and lima beans
- 233 - Investigations of cereal diseases (except barley under 530)
- 234 - Potato diseases, particularly fungus and virus diseases
- 237 - Onion diseases
- 239 - Corn root rot and stalk rots, ear and kernel rots, leaf blight, seedling diseases, rust and corn smut and their control
- 267 - Crown gall and related diseases and their control
- 267c - Nature of a mycorrhiza-like mycelium in potato tubers
- 559 - Miscellaneous vegetable diseases: carrot yellows, mineral deficiency, tomato, radish, spinach, cucumber and beet diseases
- 569 - Diseases of forest nursery stock and forest trees, and methods for their control
- 587 - Diseases of forage crops, particularly alfalfa, clover, sweet-clover, grasses and soybeans
- 608 - Development of blister rust resistant white pine trees
- 794A - Laboratory investigations concerned with growth requirements, metabolism and strain improvement of microorganisms
  - A. Nature and action of streptomycete phages, new antibiotics, strain identification and classification of streptomycetes
- 810 - Physiology of superficial dermatophytes
- 847 - Chemical control of plant diseases. Studies on the persistence, penetration and movement of fungicides on and in plant tissue and on the mode of action of fungicides
- 880 - Investigations on simple slime molds
- 891 - Environmental relations of vegetable virus diseases

## WISCONSIN (cont'd)

- 901 - Nature of parasitism and disease resistance
- 992 - Minimum moisture concentrations for growth of microorganisms
- 1011 - Genetical and serological analysis of physiological specialization in the cereal rust pathogens; genetic behavior of antigenic substances in rust fungi
- 1056 - Hardwood stem and butt rots and cankers; maple die-back (blight)
- 1067B- Phage characterization and use in plant studies
- 1090 - Diseases of small fruits, especially raspberry and strawberry, and their control
- 1131 - Techniques for purification of unstable plant viruses
- 1195 - Mechanisms of pathogenicity in facultative parasites
- 1209 - Growth regulators and pathogenesis in the wilt diseases
- 1217 - Fungi causing toxicity in animals used for human food
- 2007 - Physiology, parasitism and variability of Albugo species

### 7. Soils - Federal-grant

- 1304 - Mechanisms and extent of pesticide adsorption by soil and soil colloidal components

### 8. Veterinary Science - Federal-grant

- 1087 - Means of controlling coccidiosis in cattle

### 8. Veterinary Science - Non-Federal

- 1236 - Helminths in cattle, swine and sheep

### 9. Weeds - Federal-grant

- 1201 - Nature and extent of competition between quackgrass and field crops (NC-61)
- 1203 - Ecology and control of weeds in hayfields
- 1205 - Control of weeds in vegetables and small fruits
- 1206 - Chemical studies on weed competition and control
- 2004 - The use of herbicides in forest practice

9. Weeds - Non-Federal

1125 - Fundamental studies of herbicidal action in forest trees

10. Miscellaneous - All Other - Federal-grant

952 - The quality of fresh and processed fruits as affected by spray materials

1301 - Trace levels of pesticides in agricultural commodities in marketing channels (NCM-37)

1307 - The effect of processing on the pesticide content of dairy products

10. Miscellaneous - All Other - Non-Federal

1230 - Comprehensibility of pesticide package labels



2. Crop Breeding - Federal-grant

488 - Breeding and selection studies with potatoes

780 - The relation of big sagebrush and related forms to the environment  
(W-25)

5. Entomology - Federal-grant

785 - Population biology of the big-headed grasshopper, Aulocara ellioti  
(W-37)

795 - Parasites and predators as factors in the ecology of rangeland grasshoppers

806 - Orientation of seed chalcids to physical and chemical factors  
(W-74)

871 - Biological and bacteriological studies on the face fly

892 - Rangeland improvement associated with harvester ant control

5. Entomology - Non-Federal

518 - Control of currently important insect pests

WS-791- Survey of insect pests and plant diseases in Wyoming

WS-794- The occurrence and distribution of rangeland insects in Wyoming and the effect of vegetational changes through sagebrush control on their abundance

897 - Robber fly behavior and taxonomic status

900 - Effect of spiders on alfalfa field insect populations

6. Plant Pathology - Federal-grant

741 - The effect of the decomposition products of crop residues and certain soil organisms on fungus-induced root diseases (W-38)

744 - Diseases of beans in Wyoming

916 - The nature and inheritance of Fusarium root rot resistance in beans (W-83)

6. Plant Pathology - Non-Federal

WS-726- Commandra blister rust of pine in Wyoming

8. Veterinary Science - Federal-grant

797 - Immunological and management practice studies of gastrointestinal roundworms of ruminants (W-35)

8. Veterinary Science - Non-Federal

915 - Enzootic winter coccidiosis: its severity and the prevailing species

9. Weeds - Federal-grant

607 - Chemical control of perennial farm and range weeds

608 - Use of herbicides for control of weeds in sugar beets

668 - Biochemical effects of herbicides on pectic substances and related plant cell-wall constituents (W-52)

822 - Biological control of weeds and poisonous range plants

898 - Interaction of temperature with other factors on the response of Canada thistle to herbicides (W-77)

917 - Fundamental biochemical and biophysical mechanisms involved in herbicidal action (W-52)

9. Weeds - Non-Federal

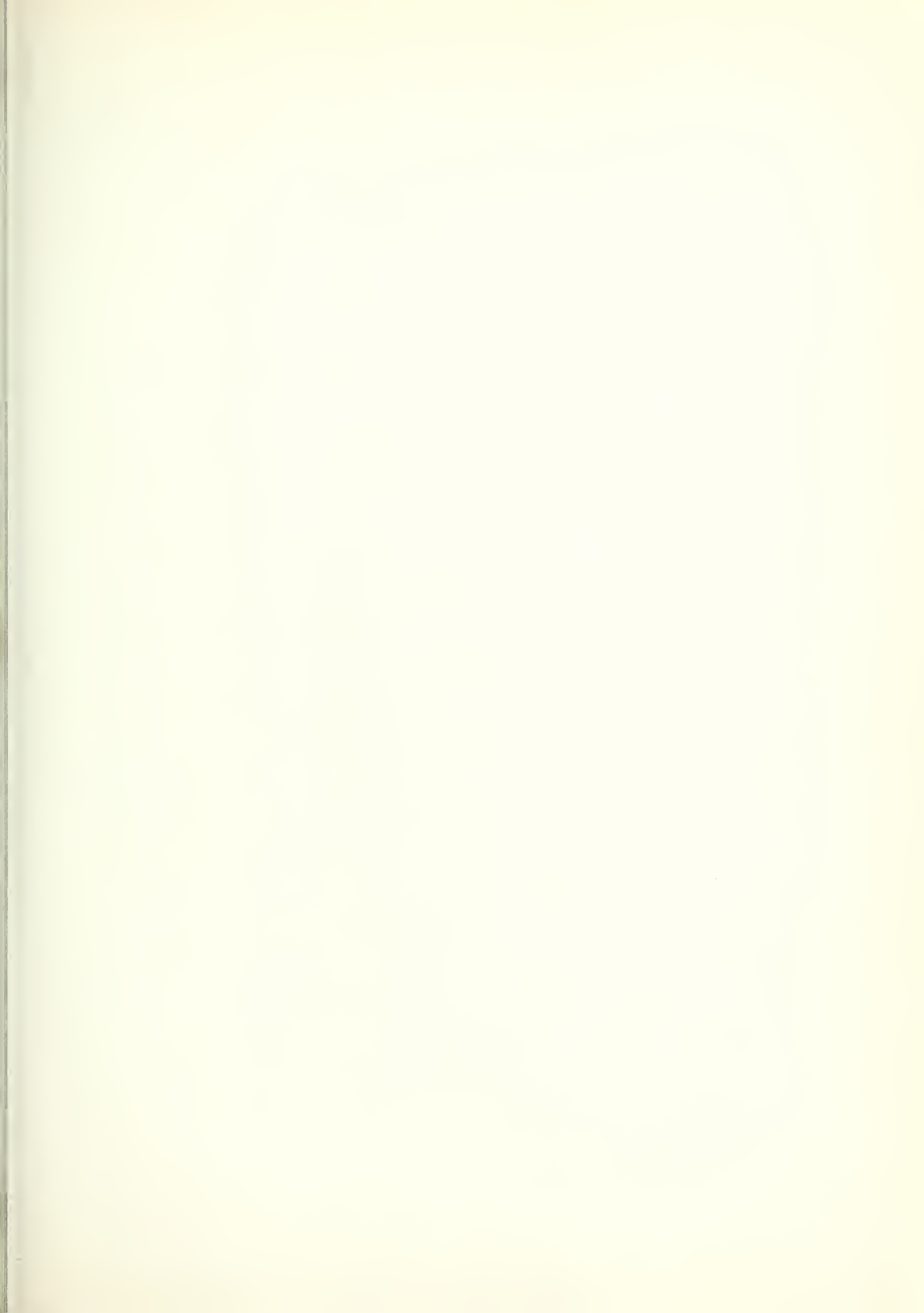
WS-716- Development of planting and weed control equipment for sugar beet production

WS-775- Effect of big sagebrush control upon snow cover and soil moisture reception and depletion





















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